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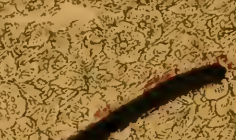

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TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE STATE OF

NORTH CAROLINA.

DIVISION OF HEALTH SCIENCES LIBRARY

FORTY-SEVENTH ANNUAL MEETING

HELD AT

TARBORO, N. C.

MAY 22 AND 23, 1900.

CHARLOTTE, N. C.
Queen City Printing and Paper Co.
1900.

Publication Committee.

JOHN C. MONTGOMERY, Charlotte, Chairman.
ROBERT L. GIBBON, Charlotte.
GEO. W. PRESSLY, Charlotte.

ROSTER OF OFFICERS

——OF THE——

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

	DATE.	PLACE.	PRESIDENT.	VICE-PRESIDENTS.	SECRETARY.	TREASURER.
	1849	Raleigh.	**F. J. Hill.**		W. H. McKee.	
1	1850	"	**Edmund Strudwick.**	F. J. Haywood, C. E. Johnston, J. E. Williamson, W. G. Thomas.	"	W. G. Hill.
2	1851	"	**Edmund Strudwick.**	C. E. Johnston.	"	"
3	1852	Wilmington.	**J. E. Williamson.**	Thos. N. Cameron, Wm. G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood.	J. J. W. Tucker.
4	1853	Fayetteville.	"	W. G. Hill, Johnston B. Jones, J. G. B. Myers, N. J. Pittman.	W. W. Harris.	Daniel Dupree.
5	1854	Raleigh.	**J. H. Dickson.**	N. J. Pittman, J. G. B. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell.	"
6	1855	Salisbury.	"	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	"	J. B. Dunn.
7	1856	Raleigh.	**C. E. Johnson.**	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	"	"
8	1857	Edenton.	"	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas.	"
9	1858	Newbern.	**W. H McKee.**	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	"	"

10	1859	Statesville.	**W. H. McKee.**	Jas. G. Ramsay, J. R. Mercer,	P. E. Hines, W. T. Howard.	W. G. Thomas.	C. W. Graham.
11	1860	Washington.	**N. J. Pittman.**	P. T. Henry, M. Whitehead,	R. H. Winborne, T. S. Leach.	"	"
12	1861	Morganton.	"	J. J. Summerell, G. W. Hodges,	C. T. Murphy, W. A. B. Norcom.	"	
13	1866	Raleigh.	**J. J. Summerell.**			"	"
14	1867	Tarboro.	**W. G. Thomas.**	E. Burke Haywood, W. L. Barrow,	R. H. Winborne, J. W. Jones.	S. S. Satchwell,	"
15	1868	Warrenton.	**S. S. Satchwell.**	Hugh Kelly, Chas. J. O'Hagan,	Geo. A. Foote, J. H. Baker.	Thos. F. Wood.	J. W. Jones.
16	1869	Salisbury.	**E. Burke Haywood.**	Thos. E. Wilson, C. T. Murphy,	A. B. Pierce, M. A. Locke.	"	"
17	1870	Wilmington.	**C. J. O'Hagan.**	E. A. Anderson, W. R. Sharpe,	F. N. Luckey, R. L. Payne.	"	
18	1871	Raleigh.	**Hugh Kelly.**	D. N. Patterson, J. B. Seavy,	R. C. Pearson, G. L. Kirby.	"	"
19	1872	Newbern.	**W. G. Hill.**	H. W. Faison, G. H. Macon,	R. I. Hicks, W. A. B. Norcom.	Jas. McKee.	"
20	1873	Statesville.	**M. Whitehead.**	W. T. Ennett, Chas. Duffy,	William Little, T. P. German.	"	H. T. Bahnson.

21	1874	Charlotte.	**W. A. B. Norcom.**	J. B. Jones, C. G. Cox,	R. F. Lewis, J. L. Knight.	Jas. McKee.	H. T. Bahnson.
22	1875	Wilson.	**J. W. Jones.**	Walter Debnam, Wm. Little,	J. A. Gibson, D. N. Patterson.	"	"
23	1876	Fayetteville.	**Peter E. Hines.**	Jos. H. Baker, T. D. Haigh,	G. G. Smith, J. K. Hall.	"	"
24	1877	Salem.	**Geo. A. Foote.**	J. K. Hall, A. Holmes,	B. W. Robinson, A. A. Hill.	"	A. G. Carr.
25	1878	Goldsboro.	**R. L. Payne.**	E. M. Rountree, S. B. Flowers,	Richard Anderson, L. A. Stith.	L. J. Picot.	"
26	1879	Greensboro.	**Chas. Duffy, Jr.**	J. A. Gibson, Jas. McKee,	Willis Alston, A. A. Hill.	"	"
27	1880	Wilmington.	**J. F. Shaffner.**	J. K. Hall, W. R. Wilson,	W. C. McDuffie, R. F. Lewis.	"	"
28	1881	Asheville.	**R. B. Haywood.**	J. A. McRee, R. H. Speight,	W. H. Lilly, W. J. H. Bellamy.	"	"
29	1882	Concord.	**Thos. F. Wood.**	T. J. Moore, S. E. Evans,	D. J. Cain, Jno. McDonald.	"	"
30	1883	Tarboro.	**J. K. Hall.**	A. W. Knox, E. S. Foster,	J. M. Hadley, Jno. Whitehead.	"	"
31	1884	Raleigh.	**A. B. Pierce.**	F. W. Potter, R. Dillard,	G. W. Graham, G. W. Long.	"	"

32	1885	Durham.	**W. C. McDuffie.**	Jas. McKee, W. H. Whitehead,	T. E. Anderson, A. G. Carr.	W. C. Murphy.	R. L. Payne, Jr.
33	1886	Newbern.	**Jos. Graham.**	H. T. Bahnson, J. L. McMillan.	L. J. Picot, W. W. Faison.	J. M. Baker.	C. M. Poole.
34	1887	Charlotte.	**H. T. Bahnson.**	G. G. Smith, C. M. Poole.	J. L. Nicholson, H. B. Ferguson.	"	"
35	1888	Fayetteville.	**T. D. Haigh.**	W. T. Ennett, T. E. Anderson.	J. A. Dunn,	"	M. P. Perry.
36	1889	Elizabeth City.	**W. T. Ennett.**	W. J. Jones, G. W. Long.	S. W. Stevenson,	"	"
37	1890	Oxford.	**G. G. Thomas.**	R. L. Payne, Jr., S. W. Booth.	Richard Dillard,	J. M. Hayes.	"
38	1891	Asheville.	**R. H. Lewis.**	S. W. Battle, W. H. Lilly.	J. L. Nicholson,	"	"
39	1892	Wilmington.	**W. T. Cheatham.**	T. S. Burbank, W. H. H. Cobb.	J. W. Long, W. D. Hilliard.	"	"
40	1893	Raleigh.	**J. W. McNeill.**	W. C. Galloway, J. M. Hadley.	H. H. Harris, Thos. Hill.	R. D. Jewett.	"
41	1894	Greensboro.	**W. H. H. Cobb.**	J. A. Hodges, Willis Alston.	R. W. Tate, M. H. Fletcher.	"	"
42	1895	Goldsboro.	**J. H. Tucker.**	J. H. Way, O. McMullan.	W. H. Harrell, C. A. Misenheimer.	"	"

43	1896	Winston-Salem.	**R. L. Payne.**	S. D. Booth, J. A. Burroughs,	J. P. Munroe, J. E. Grimsley.	R. D. Jewett.	M. P. Perry.
44	1897	Morehead City.	**P. L. Murphy.**	J. C. Walton, M. R. Adams,	A. A. Kent, B. L. Long.	"	"
45	1898	Charlotte.	**Francis Duffy.**	E. C. Register, J. B. H. Knight,	A. T. Cotten, F. H. Russell.	"	"
46	1899	Asheville.	**L. J. Picot.**	I. W. Faison, H. H. Dodson,	J. W. White, W. C. Brownson.	Geo. W. Pressly.	G. T. Sikes.
47	1900	Tarboro.	**Geo. W. Long.**	C. M. Poole, T. B. Williams,	James M. Parrott, W. D. Hilliard.	"	"

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

JAMES H. DICKSON, Wilmington.....1859–1866
Charles E. Johnson, Raleigh.....1859–1866
Caleb Winslow, Hertford.....1859–1866
Otis F. Manson, Townsville.....1859–1866
Wm. H. McKee, Raleigh.....1859–1866
Christopher Happoldt, Morganton.....1859–1866
J. Graham Tull, Newbern.....1859–1866
SAMUEL T. IREDELL, Secretary.....1859–1866
N. J. PITTMAN, Tarboro.....1866–1872
E. Burke Haywood, Raleigh.....1866–1872
R. H. Winborne, Edenton.....1866–1872
S. S. Satchwell, Rocky Point.....1866–1872
J. J. Summerell, Salisbury.....1866–1872
R. B. Haywood, Raleigh.....1866–1872
M. Whitehead, Salisbury.....1866–1868
J. F. Shaffner, Salem.....1868–1872
WM. LITTLE, Secretary.....1866–1872
CHAS. J. O'HAGAN, Greenville.....1872–1878
W. A. B. Norcom, Edenton.....1872–1878
C. Tate Murphy.....1872–1878
Geo. A. Foote, Warrenton.....1872–1878
J. W. Jones, Tarboro.....1872–1878
R. L. Payne, Lexington.....1872–1878
CHAS. DUFFY, JR., Newbern.....1872–1878
P. E. HINES, Raleigh.....1878–1884
T. D. Haigh, Fayetteville.....1878–1884
R. I. Hicks, Williamsboro.....1878–1880
Geo. L. Kirby, Goldsboro.....1878–1884
Thos. F. Wood, Wilmington.....1878–1884
Jos. Graham, Charlotte.....1878–1884
H. T. BAHNSON, Salem.....1878–1884
R. H. Lewis, Raleigh.....1880–1884
WM. R. WOOD, Scotland Neck.....1884–1890
A. W. Knox, Raleigh.....1884–1890
Francis Duffy, Newbern.....1884–1890
P. L. Murphy, Morganton.....1884–1890
Willis Alston, Littleton.....1884–1890
W. J. H. BELLAMY, Wilmington.....1884–1890
J. A. Reagan, Weaverville.....1884–1890
R. L. Payne, Jr., Lexington.....1890–1892
Geo. W. Purefoy, Asheville.....1890–1892
Geo. G. Thomas, Wilmington.....1890–1894
Robt. S. Young, Concord.....1890–1894
Geo. W. Long, Graham.....1890–1896
W. H. WHITEHEAD, Rocky Mount.....1890–1896
L. J. PICOT, Littleton.....1890–1896
JULIAN M. BAKER, Tarboro.....1892–1898
H. B. WEAVER, Asheville.....1892–1898
T. S. Burbank, Wilmington.....1894–1898
J. M. Hays,* Greensboro.....1894–1897
D. T. TAYLOE, Washington.....1896–1902
R. H. Whitehead, Chapel Hill.....1896–1897
THOS. E. ANDERSON, Statesville.....1896–1902
Kemp P. Battle, Raleigh.....1897–1900
W. H. H. Cobb, Goldsboro.....1898–1900
J. HOWELL WAY, Waynesville.....1897–1902
Albert Anderson, Wilson.....1898–1902
E. C. REGISTER, Charlotte.....1898–1902
T. S. McMullan, Hertford.....1900–1902
J. C. Walton, Reidsville.....1900–1902

*Service on Board terminated by death in May, 1897.
NOTE.—The names of members who served as President appear in CAPS; of those who served as Secretary in SMALL CAPS.

OFFICERS AND COMMITTEES

Session of 1900.

PRESIDENT.

GEO. W. LONG, Graham.

VICE-PRESIDENTS.

C. M. POOLE, Craven.
T. B. WILLIAMS, Ridgeway.
J. M. PARROTT, Kinston.
W. D. HILLIARD, Asheville.

SECRETARY.

GEO. W. PRESSLY, Charlotte.

TREASURER.

G. T. SIKES, Grissom.

ORATOR.

T. S. MCMULLAN, Hertford.

ESSAYIST.

R. H. WHITEHEAD, Chapel Hill.

LEADER OF DEBATE.

JAMES M. PARROTT, Kinston.

BOARD OF CENSORS.

G. G. THOMAS, Wilmington. R. H. SPEIGHT, Wrendale.
L. J. PICOT, Littleton. M. H. FLETCHER, Asheville.
C. M. POOLE, Craven.

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R. H. LEWIS, Raleigh. N. P. BODDIE, Durham.
G. T. SIKES, Grissom. L. J. PICOT, Littleton.
H. A. ROYSTER, Raleigh.

OBITUARY COMMITTEE.

K. P. BATTLE, JR., Raleigh. P. L. MURPHY, Morganton.
G. W. PUREFOY, Asheville.

OFFICERS AND COMMITTEES

For 1901.

PRESIDENT.

JULIAN M. BAKER, Tarboro.

VICE-PRESIDENTS.

M. H. FLETCHER, Asheville.
C. A. JULIAN, Thomasville.
D. A. STANTON, High Point.
E. M. SUMMERELL, Mill Bridge.

SECRETARY.

GEO. W. PRESSLY, Charlotte.

TREASURER.

G. T. SIKES, Grissom.

ORATOR.

EARLE GRADY, Tryon.

ESSAYIST.

R. S. PRIMROSE, Newbern.

LEADER OF DEBATE.

D. A. STANTON, High Point.

BOARD OF CENSORS.

G. G. THOMAS, Wilmington. R. H. SPEIGHT, Wrendale.
L. J. PICOT, Littleton. M. H. FLETCHER, Asheville.
C. M. POOLE, Craven.

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R. H. LEWIS, Raleigh. A. W. KNOX, Raleigh.
A. G. CARR, Durham. W. P. WHITTINGTON, Asheville.
W. P. BEALL, Greensboro.

OBITUARY COMMITTEE.

JOEL HILL, Lexington. W. T. CHEATHAM, Henderson,
J. C. RODMAN, Washington.

PRESIDENT'S ADDRESS.

By GEO. W. LONG, Graham, N. C.

Fellow Members of the Medical Society of the State of North Carolina:

In looking back over our past history there are many points upon which it is pleasant to dwell and among these there are none, and we are glad to have this public opportunity to acknowledge it, which gives us more pleasure and which kindles more kindly associations than our last meeting in this town just seventeen years ago.

Some who cheered us by their presence and counsel then have gone to where, we trust, "Beyond these voices there is peace." Others of us have been looking forward, with almost feverish anxiety, to the renewal of those old friendships which cluster around this hospitable community. This is the home of the lamented Pittman, whose generosity and love for this society have been perpetuated by a noble and gracious daughter. Every additional year has added largely to our numbers and influence, and of course our responsibilities have been correspondingly increased. The normal growth and development of our society has not been due to the adoption of any questionable methods. Those who have contributed the most to the permanancy of this organization have always made its constitution the guiding star of their logic: "The objects of this society shall be the advancement of medical knowledge, the elevation of professional character and the promotion of all measures of a professional nature that are adapted to the relief of suffering humanity, and to improve the health and protect the lives of the community." Vide Article II of our Constitution.

It has been my esteemed privilege as well as pleasure to attend almost every meeting of this society for nearly a quarter of a century. In a large majority of instances I was one of the first on hand and one of the last to leave. I can truly say that I have never regretted it. I believe this society has done more for the elevation of the profession in our State than all other agencies

combined. I advise all the young doctors to join it as soon as possible and take an active interest in its work. Without attempting to enter into details of work already done or indulging in heartless compliment of those who have done their duty, I want to suggest that although doctors are disposed to disagree about a great many things there are some things upon which they do agree. One of these is that the study of anatomy lies at the very foundation of a medical education. In fact I do not see how any one can practice intelligently without using his anatomy all the time. If this is so it strikes me that it is the duty of this society to adopt a resolution instructing our Committee on legislation to make an effort to get our legislature to enact a suitable dissecting law by which ample material may be obtained upon reasonable terms. At present it is a difficult matter, so I am credibly informed, for our medical schools to procure sufficient dissecting material to supply their classes. When one comes to think carefully about it our schools are really among the most active agencies in all the fundamental progressive work of our profession. I do not see how we can go wrong in encouraging them in every legitimate way in our power. Every move we make here or elsewhere for their improvement is a step in the right direction. We have it in our power by proper organization and management to influence our legislators to give us not only a suitable dissecting law, but also an act which will enable the state to provide for the neglected insane. Who can read without feelings of sorrow and sadness the appeals of the friends of these unfortunate people to the superintendents of our hospitals? Our attention has been directed to the subject time and again in various ways and it is high time for the medical profession to take some decided stand and emphasize the great and urgent necessity of giving these helpless people the benefits to be derived from special treatment. I do not believe that the facts are generally known by the people. It is the duty of the profession to try to inform them. As soon as the true condition is understood I think that there can be no doubt but that ample provision will be made. If it is not we will have the consolation of knowing that we have performed our duty. We can do nothing more. We ought not to be satisfied with doing less. It would add greatly to our usefullness if every regular

doctor in the State would consider himself a member of our State Board of Health. We would then have the profession in shape to work on sanitary lines, which is really its true mission. A little more zeal and earnestness in the work of educating our people would doubtless induce them to respond, through their represenatives, in a satisfactory way. Some of our members act as if they thought this society could run itself. This is a very great mistake. Good physicians cannot attend these meetings at all except at a great sacrifice, and the work cannot be properly performed without great labor. So let us resolve to do our duty in the love of it. If our State is to enjoy the benefit of wholesome sanitary legislation, it will, in my opinion, have to be brought about chiefly through our profession. Very much that is written nowadays will scarcely be read by thinking people of the generation which is to follow us. If we make higher moral and professional education the passport, and sanitary medicine the watchword, we need have no fears but that our work will stand the test of time, the great adjudicator which burnishes the gold and buries the dross. The excellent work performed by our Examining Board has resulted in enlarged facilities for instruction in all the medical colleges of our country. The number of years have been increased and the terms made longer, so that some of the commencements do not come off in time for the applicants to be on hand at the time that our Board of Examiners meets. The change of our meeting from the 15th, as first announced, to the 22d, was but an attempt of those having the matter in charge to meet this exigency. I hope this question may be wisely determined. I understand from Dr. W. W. Keen, President of the American Medical Association, that the Gallinger Antivivisection bill is still pending and that the Senator is trying to push it all he can. I suggest that we repeat our resolutions of protest and send copies to our Senators, also to the Senate and House. If we could secure the active opposition of Senator Pritchard, who is a member of the committee, even to the extent of getting it out of the committee, we would gain a great point. So far as I know our profession is to be congratulated on the fact that it is practically free, here in North Carolina, from imbibing the fallacious doctrines of the Osteopaths and Christian Scientists. If any would like to see a satisfactory

refutation of the doctrine of Christian Science I would refer them to Rev. W. P. McCorkle, Graham, N. C., who has written the best book I have ever seen anywhere on the subject.

As is usual on such occassions our Obituary Committee will have the painful task of preparing appropriate resolutions of respect to the memory of some of our truest and best members who have been called to a higher service. Among these are Drs. Littlejohn, Gray, Turlington, Hornaday, McDuffie, Tucker and Wood.

Having briefly endeavored to remind you of a few of those things which I conceive to be of some practical importance to our Society and State, I hasten to conclude. Recognizing a superintending Providence in all things I trust that our deliberations may be characterized by wisdom and prudence so that when our work is finished it may bring honor to ourselves, gratification to our friends and usefulness to our country. To have your confidence and esteem is a great distinction—I do appreciate it. Finally permit me to thank you all again with assurances that wherever in the Providence of God your lot may be cast you will have my earnest prayers and zealous wishes for your welfare, present and eternal.

ANNUAL ORATION.

"Watchman, Tell Us of the Night."

By T. S. McMULLAN, Hertford, N. C.

Mr. President, Members of the N. C. Medical Society, Ladies and Gentlemen:

The future, that great space which divides us from eternity, which shall echo to the tramp of millions, born and unborn, that shall witness the triumph of many of our beginnings and the beginnings of our forefathers is a sealed book. Since the days of Malachi, the last of the inspired prophets (barring the announcement of the birth of Christ by St. John the Baptist), no man, with power human or divine, has been able to probe its mysteries, to fathom its depths, to look out over interminal expanse and tell us now living what are its hidden thoughts and its hidden actions; what struggles between man and man he sees; what conflicts between races he sees; what mighty projects, what mighty powers, what awful upheavals of nature and what bloody revolutions of men are hidden in its mysterious folds as with a cloak. The old seers of long ago claimed, and the people believed them, to foretell events. In the glittering twilight of a summer's eve, when the helmets of the foeman's hosts encamped about old Priam's city cast their scintillating glances upon his native walls, where sat around the doorstep of the palace his aged father, and where his warlike mien and martial thoughts were softened by his child in the arms of its mother, the seer told Hector that before to-morrow's sun the Greeks should conquer Troy. Upon the rugged slope of Ben Lomond, with the glittering sheen of its Loch meeting his eye, as if in its placidity he saw the picture of his chieftian fallen, the Scottish bard sang to Lochiel his doom. The Ides of March were predicted to great Cæsar as his day of death, and the lateness of the conspirator's blow was but the intensifying to the people of his prophetic vision. And in modern times, men have been

swayed to deeds of evil, and have been led to deeds of daring by the words of those they believed in; men have been murdered, women murdered, children murdered, character murdered, intellect murdered, because of the faith the people have had in prophesy; nations have fallen, and nations have arisen in the name of this high priestess, and in some way during all the eternal years the names of the old masters have been invoked to bring forth testimony that the power of seeing the hidden had not been lost. It is said, Mr. President, that the eagles of France were carried to such glorious victories during the first Consulate and Empire, because Napoleon believed in the prophecy made his mother while yet he was in her womb; that he had faith in this foretelling of his "Star" of destiny" that it was this "Star" that lead him in his terrific crossing of the bridge of Lodi; that it was this "Star" that lead him when he changed defeat to triumph at Marengo; that it was this "Star" that lead him when he charged the Russian hosts at Austerlitz, where set their sun of empire as did the orb of day; that it was this "Star" in which he believed, that was his beacon at Wagram, and at Jena, and at Auerstadt, and that this faith in his "Star" never faltered; no, not even when it was eclipsed at Elba, and at Waterloo sank among the gory bodies of his devoted guard to rise no more. And even now, in this enlinghtened time, we find those among us who believe in prophesy and soothsayings; not many, it is true, but some.

But, Sir, there is a way by which we can presage events; by which we can judge of men's future walks; by which we can measure their thoughts, consider their ways, and determine their ends. The philosophy of actions, the metaphysics of mind is the same since the world began; the laws of nature are the same now and forever, as they were yesterday, and so the laws of our human existence are like the laws which governed Adam, which governed Noah, which governed Saul, which governed Judas.

This law of analogy in life, by which we can deduct and draw conclusions, and which aids us in foretelling what may transpire in the future, is not akin to prophesy; it has no inspiration, no subtleties, but yet is a law of divine conception, of divine injunction and is not allied in any degree to that quality, attributed by latter-day false prophets to themselves, which

quality to them is useful only for unholy purposes and unholy gains.

The past of man gives us a working hypothesis for viewing his future. All scientists of to-day judge the future from the past; the astronomer, in his observatory, computes certain evolutions of certain planets at certain times from his knowledge of past evolutions; the mariner can guide his ship to harbor, because the experience of other mariners has perfected his charts; the general, with his ponderous army, can wield it as he would a mighty weapon, because each age, adding its rules to those existing, has made war a science. So in all the ways of life, laws fixed and immutable govern us, and as surely as we are carrying on the work begun, shall our work, unfinished and susceptible to many changes and of many betterments be carried to its end; and so may we of this time, looking back through the vista of years that are gone, and casting our eyes futurewards, sing with Thomas Campbell,

> "I watch the wheels of nature's mazy plan,
> And judge the future by the past of man."

An address of this kind, and on this occasion, is expected to be, Ladies and Gentlemen, I presume, semi-medical; it is expected that being addressed to an audience not entirely scientific, it be not couched in such mellifluous technicalities that the layman be confused, nor should it be entirely void of special interest to the profession. Our medical societies are the couches from from which spring the best and truest of medical knowledge, and in their sessions our first endeavors should be to instruct, to bring forth some ideas, and to put in action some forces that shall hasten us on our restless path. So to-night I shall try to draw some conclusions as to the future of medicine from its past; not as a prophet, or a seer, but simply as an indigent observer of past and present events. It will be needful to carry you back in the past ages; to note the birth of our profession; its existence among hostile surroundings, its trials, its fortitudes, its mistakes, its discoveries, its influence on men and kings, and finally its evolution to that state wherein it was ranked as a science beloved and honored; its followers, past and present, sought because of faith, of themselves in their science, and of the people in them.

The history of Medicine, Mr. President, has not yet been fully written, nor can it ever be; the deeds of its lowly heroes will not be known. Like in some vast mountain range some peaks o'ertop the lower hills, and stand out to the eye pictures of eternal grandeur, so in the past of the history of Medicine, there are certain epochs, that from century to century stand forth as sentinels of its progress, but which, like the mountain peaks that lean for support on the foot-hills about them, are made great because of the work of the lowly and obscure. Its history is a history of discoveries and many errors; of struggles against superstitions, against priestcraft, and against church hierarchies. Hand in hand has it marched with civilization; step by step has its foundation, true and scientific, been laid in the minds of the world, and almost alone has it o'ertopped false creeds of false prophets, and shown its former enemies its grandeur, its beauty, and its usefulness.

The beginning of the medical art is nearly co-eval with civilization; Egypt, in the time of Joseph was possessed of men versed in the arts of embalming and healing, and the book of Leviticus, viewed even from a modern standpoint, is a wonderful exposition of the laws of right living, and no greater teacher of hygiene than Moses has yet appeared. And so during this period we have, though obscure and incomplete, a history of the art if not the science of Medicine.

It is only needful for our purpose to-night to mention these different eras; that instructive period, when human beings, less than brutes, but in somewise, knew intuitively that when they were sick, certain changes in their laws of living, in their diet, and in their conduct were demanded. Then the times were, when signs and symbols were regarded, and immolations to the gods and goddesses were offered as appeasements in behalf of the physically distressed The Pythagorean age, when doctors first visited the sick, and the epoch marked by the greatest advance yet known, the age of reason or philosophy, the chief worker in which age, was he who may be called the father of rational medical practice; and though the theories of Hippocrates were many of them wrong and his deductions faulty, yet he and his school are the pioneers of our teachings to-day; they sought and advanced reasons for what they did, and imbued men and teachers

with the sense that the animal economy of man must be known. This teaching and tendency led to the anatomical epoch of medical teaching; the chief promoters of which were Herophilus and Celsus, and after them the great physician Galen, to whom more than to any other man of early history is the fund of medical literature indebted. It is a grand picture to us, Mr. President, that in these times, when the mind of the living earth was blighted by false beliefs; when men's souls were in darkness; when all they had to lead them aright was the voice of right implanted in them from the foundation of the world by that God they knew not of; when superstition, and auguries and signs were the mainsprings of their actions; when the frown of Apollo and the fury of Diana were more to be feared than all the pestilences and famines; when doctrines were unsettled and reasons wanting. It is, I say, a beautiful reflection to us of this latter-day time, that these men, reeking with a desire to upbuild mankind and to comfort the sick; burning with an enthusiasm that would shame some of later years, toiling with little gain, derided for their foolishness, and chided by kinsman and people, that these men toiled on, and on, and on in spite of lack of opportunity for investigation, unyoked their science from the burdens upon it, and laid for us their followers, the true foundations upon which the principles of medicine rest to-day.

But following this came a transitory state; a state wherein most of what had been believed was discarded and forgotten; the first part of this period is from about 200 A. D. and embraces near fifty years. The world's power was incorporated in one man, and Rome upon her seven hills held dominion over all things earthly; internal dissensions, those disarticulators of political economies, had ceased and no strifes endangered the peace of this mighty empire. And just as the minds of its citizen politicians were lulled into repose by the flight of enmities and wars, so scientific discussions and philosophic discourses were hushed, and medical science languished and retrograded. This time offers little of note; the chief matter of interest being that it presents the world Astius, the first Christian doctor. And it is further of remembrance, Mr. President, that a woman, living in luxury and illustrious, a fair dame in the Eternal City, instances the first record of surrendered wealth, of surrendered

homage, of surrendered pleasure, in that she gave up all to help the sick and indigent; and Paulina, this Roman matron, leaving her home, and together with other Christian women of Jerusalem, established there, under the vine-clad walls of the holy city, near, it is said, the very gate where the Great Physician healed the blind, an asylum for the sick, a refuge for the troubled. A glorious thought to the women of to-day should it be that they are the beginners in this work; that to them belongs the first glory of this mighty good, and that to them will be glory everlasting for their sweet womanly charity; always has it been, and alwways will it be, Mr. President, that the women, God bless them, shall be the vice-gerents of angels on the earth.

The second part of this transitory period begins at the burning of the Alexandrian library and lasting near fourteen centuries. The Star of the West was declining, and the stages of investigation were being erected in the East; and even here we find those in authority and power the victims of fanaticism. The vast accumulation of scientific lore had been destroyed, and in all the known world the zeal of the proselyte was greater than the zeal of the philosopher. But this was soon changed, and a little later we find the Arabian physician respected and beloved; these set aside the dogmas and superstitions and fanaticisms of their former chiefs, and from the writings of Hippocrates and Galen and Aristotle, they sought to weave theories and construct practices for the betterment of physical man. The greatest of these, Rhazes, should be remembered for his thoughtful advice to the laity in the matter of their choosing their medical advisers, and this precept, in itself, will make him forever great. While the Arabs were progressing in our branch of knowledge, in the West, all was dark and gloom; the era of science seems to have closed; barbarism reigned; hordes of pillagers swept over the land; its traditions lost and its people enslaved. Charlemagne, it is true, himself a friend to the arts, restored some order—during his reign, and sanctioned some original research, but at his death, the world seemed again to be in darkness and in doubt, and

> "Man's inhumanity to man,
> (Made) countless thousands mourn."

Only at the 11th century, when feudalism was established and the monasteries gave their protection, was there any revival in

the interest in medicine. The school of Salerno, a vast and mighty institution, was a product of this age, and its pupils among the greatest and best versed in the healing art; but this school soon fell behind, and its departed glory was all that lived; its ruins are silent, but it marked an epoch in Medicine, and upon these ruins have been founded institutions, whose children have nourished its science.

We come now to what may be termed modern medicine, the age of the renaissance; we may see how minds were reorganized in every branch of knowledge; how invention succeeded invention; how investigation succeeeded investigation; how the lethargy, that had almost paralyzed letters and science, was thrown off, and how like giants aroused, the people shook themselves free from their Gothic bonds, and acknowledged their own power to lead, rather than to follow; saw in themselves as if awakened from a stupor the meaning to attempt new things and achieve new ends.

We can see them, despite the edicts against dissections, despite the threatenings of the laity, with the church hurling its anathemas against them, with the bishops thundering against them, we can see these pioneers of modern medicine go forward, seeking out the causes and cures of diseases and denying not those whose abuse they bore, and whose insults and reproaches were heaped upon them. The church, Mr. President, and I say it with the knowledge of history, and as a fact which cannot be refuted; the chuch, in these early modern times, awakened as it was to its dream of social power, was the most unrelenting foe which the art of curing had to encounter. Its priests, full of superstition and awe, their power subdued as their people became wise, their despotism diminished when their people saw the light, were most pronounced obstacles to the steps of medical research, and not until revolutions, and social upheavals, and religious reformations purified the body politic, and taught the church that its mission on earth was not to govern but to save souls; until these things adjusted the laws of living and changed from a persecution to a holy love of man for man, did an era of medical history begin, which until this day has been placid, serene, like the waters of an inland river, only broken now and then by some mountain gust, but deep and firm on its rocky bed

flowing, flowing, flowing, and widening as it flows. The names of the workers in this era are many; men honored for their benefits, and men, lowly, and hidden, have added to our storehouse of information, and though some in this latter day have sought, contrary to the ethics of their calling, and the principles of the brotherhood, to reap sordid rewards from their work, the great majority have shown an unselfishness rarely seen in men and have freely and without price given to us the fruits of their labor and of their intellect.

From this rapid and cursory history of the medical past, what Mr. President, may we forecast as to its future? As remarked before, many happenings cannot be mentioned; there were many actors on those stages whose names will live forever; many have naught by which to be remembered but the cherishment of their noble deeds by the unwritten histories of their science. But does its record in the past lead us to hope for its advancement, steady, and continued in the future? Can we hope that our art will keep pace with the world's progressive march? They tell us, sir, that in the olden time, before the beauty of Christ's kingdom had come upon the earth, and before the walls which surrounded the eastern cities had fallen by that love which He taught men, one for another; it is said that upon these walls, stationed in little towers upon them, at dusk of the day, were placed the watchmen; fearing foes from without, these sentinels were placed that they might peer into the darkness, and if needful alarm the people; and all through the night, dark and still, when the great city was hushed in sleep, and no voice was heard save a sometime whisper from sentinel to sentinel, the cry would up: "Watchman, tell us of the night." Dost thou see any danger? Dost any enemy attack? And the deep toned voice of the watchman would give back the welcome sound: "The Lord is mighty and will prevail: the Lord will protect His children, the people of His loins." And the quiet city would slumber on, having faith in its keepers, and having faith in its God. Watchmen, ye of us, who are now posted on the walls, and in front of this mighty medical advance; sentinels, whose duty now it is to keep your eyes upon the coming hosts of pestilences and diseases: actors upon this present stage of your life's work, look forth from your places of trust into the great future and tell us

of its darkness; tell us if you can, what will be the history of medicine in the days to follow; tell us, shall we become, or shall we not, greater as an art and greater as a science? Tell us, ye watchman, whose duty it is to watch, are we of to-day teaching that worldly gain is the end to which we strive? That worldly power is the end to which we strive, or are we so doing that the next century of doctors can say of their fathers, that they were men, whose chiefest aim was to instill the truths of medical science and the beauties of its art.

In noticing the destiny of the art and science of Medicine, I shall in no wise attempt to point out any purely technical advances or discoveries; there will be many, and what they will be I nor any one else can tell you. But there will be some happenings, which I think can be argued from its past history, based principally on the laws of social economics, to which I call your attention. And first I will remark, that investigations and inventions in medicine will keep pace with those in other fields of science. Though as yet we are by no means fixed in many of our theories, and though many of our practices may be at fault, yet they are day by day being re-enforced by the discovery of new evidence or are being discarded with the promptitude that becomes true scientists; and day by day, and so on in the future will it be that the hands of investigators will be more loosely tied by public clamors, and more and more as the world grows older, true medical work will be detached from assaults and sordidities, and men and women will "God speed" to the band of brothers, whose duty it is to explore the hidden beauties of the body. So that the watchman, when we hail him, can say, I see the study of our art fuller, richer, more enticing to men because they see more fully the fruits of it. The Church, too, will aid us; for many years our enemy because of false leaders, it is now our friend, and more in the ages to come than now, or in the times that have passed, will its priests and our profession labor together to teach the people the mysteries of the life here and of the life to come. It would be beyond any, sir, to presage what advances will be made along the line of medical treatment; that there was ever an increasing ratio of cures from the initiatory of our art until now, would warrant us in the statement that this increase, but in greater ratio, will continue;

whether it will be due to the surgeon's knife or to the physician's tile I know not, nor do I care; the glory of the one is the glory of the other; whether it will be the result of present theories, or those to be advanced later need not concern us now; all the great revivals in medical thought have been at the expense of other theories then well grounded; the discovery of the circulation by Harvey overturned the beliefs in "Humors"; and the apparently fixed hypotheses, upon which we are working to-day, sepsis and anti-sepsis, were pronounced over the funeral of the doctrine of "The spontaneous generation of the diseases." And so it may be, that, as opportunity is given for more thorough invention, by more scientific laws, our views, stable as they seem to-day, may be set aside; but if so, they have been links in the great chain of logical reasoning, and must be given full credit for their effects. I believe, Mr. President, that this creation was founded, not only on a just but a scientific basis; that there is somewhere, somehow in His vast kingdom a something, either of earth, or air, or water, that will cure all our ills and conquer the sting of death; the time has not yet come for man to have the fullness of this knowledge, but one by one and little by little they are being found out; slowly and step by step the ingenuity of man is being taxed, and surely, surely the boons are being vouchsafed to him. It is not too much to predict, in the light of past experience, that sepsis will be conquered, that infection will be conquered, that diseases which now seem hopeless and which presage an early end will be conquered and that the sum total of human life will be increased.

Death, Mr. President, is a divine mystery, and in these remarks I do not wish to gainsay it; far be it from me to say that the issues of life and death are with man; for never can there be here human agencies to subdue the natural decay of the body; the laws of metabolism and katabolism are fixed and certain, and that they lead sooner or later to the grave is known to us all; but the cycle of life can be made to revolve more evenly and the sum and happiness of our human state be added to. The means of saving life has been the aim and study of man since civilization began. The primary object of all our beneficent institutions to-day is the protection and preservation of human life; our great fire departments attest this; our safety appliances on all

our systems of public travel approve it; the gigantic chain of light-houses and light-ships upon our shores and upon perilous shoals, and the line of snug-looking cottages that gird our coasts teach us that death is robbed of many a victim by man's devices. Just after the storm of last August, Ladies and Gentlemen, I stood upon the golden-hued shore of the great Atlantic; it was the morning of a summer's day; overhead the sun with matchless majesty shown down his rays sparkling and glancing upon the pebbly beach, while all around was wreck and ruin wrought by the mighty blast. The hurricane had well nigh spent itself; far out as the eye could reach I stood and watched those mighty billows, white-crested, angry moving with the might and power of a Titan, resistless, sweeping on and on till with a mighty crash they hurled themselves upon the shore.

The tumult of these waves was sublime, and I said to them, Great hoary-headed monsters of destruction, great towering bulwarks of power, great monuments of your Creator's majesty. Stop, stop, I pray you and tell me, how many of God's creatures have you buried to-day; how many in all the ages passed; how many for the future? You, the great, ponderous, mighty, cruel, resistless sea, the thunders of whose billows shake your Maker's throne, the wail and anguish of whose breast make the angels quake, tell me if never, never, never, you will be appeased; never softened; never placid, as were the waters of old Gallilee, when its Lord and Master said, "Peace, be still." But no sound gave forth that old deep, but moaning, and pounding, and thundering, and crashing it came and struck that shore like some blow from a mighty hammer. But as I stood there, there came a figure of a man; he had coiled about him a skein of rope, and ever and anon looked out over the troubled waters; I knew him to be, from his weather-beaten face and simple garments, a lifeman on his beat, ready and able and willing to put his life in danger, yea, to lose it, if by doing this he could succor his brother; I knew that this rugged hero was engaged as you are in trying to save mankind; and I said to the sea, O, Sea, you great, glorious, magnificent product of God, into whose capacious maw go day by day many of your Maker's creatures; you greedy, hungry, terrible monster in your wrath, know ye, know ye, that the same infinite hand that made you and that made all the uni-

verse has given into the hands of the children of men to rob you of many of your victims; to wrestle with you, and though you yet claim many, willing hands are stretched out and brave hearts beat with the purpose to succor and to save. And just as means and devices for saving men from the sea are being improved by man's ingenuity, and modernism, even so we of the medical world are advancing and still advancing toward robbing pain and prolonging man's existence here below; and just as their means will be multiplied, so shall we, if not in this generation in some, have the fullness of knowledge, and be blessed even of our enemies.

I believe, sir, that there will be a unification of the different schools of medical teaching; that the Homeopath and the Allopath and the Regular and the Eclectic will meet upon common ground. Upon them all rests alike the responsibility of human life, and in all should be alike the divine essence of helpfulness in need, and finally, each and all, feeling the humanitarianism of their calling, and softened toward each other by a reflection of their high and mighty aims, will cease hostile criticisms, will lay aside bickerings and carpings, and will make a common platform the greatest good to suffering mankind. And, sir, in that time truths of mighty power will vanquish charlatanism and quackery and all the schisms of medicine; will exterminate the beliefs in "Christian Science," and will blot out her claims to notice; the beliefs in witchcraft in the early modern days were tempered and cast out by the openings of more advanced medical research, and all like beliefs must and will finally give way before the teaching of the truth in science, and as witchcraft and its kindred evils vanished in the light of the eighteenth century, so also will the juggleries and impious impositions practiced in this day by "divine" healers be blotted from the earth. I tell you, sir, that the open dissensions between medical men of to-day, and the different existing schools and views, are the most fruitful sources of frauds and pernicious practices, and hasten the day when all true believers in our art as a scientific one will unite to, not only separately, but unitedly condemn and put down such institutions, and unitedly protect our people.

There will come a time in our future, Mr. President, when the practice of medicine will be more a labor of love and less of

money than it is to-day; I do not believe that the most devoted one amongst us could believe this to be true now. This is essentially a moneyed and a money making age, and our profession has too much the spirit of gain; our work should be on a plane above this, and that era in the days before us that sees the most thorough divorcement of medical work from greed will see the most wholesome and beneficial advances. Better will it be for the future doctor that he become like one of the old Benedictine monks, who, with nothing but his staff and wallet, and without price, ministered to the body and the soul, than that he sink the nobility of his calling to the level of worldly gain. I do not disparage the proper getting of money; it is a great power for good, and a wholesome thrift enhances man's self-respect; but I do say, and say with emphasis, that a review of the past has taught us, that in no age in the history of medicine has true scientific work proceeded as slowly as when the world was money mad. When all the world's power was centred in Italy, and greed and avarice consorted with vice and indolence, then were the darkest days for us; and feudalism, when first it was established a promoter of scientific work, became, as it grew great and mighty, less helpful to its progress; and, sir, it is true of all times and all peoples, that devotion to the arts and sciences bears an inverse proportion to devotion to wealth. This age has shown great progress in this direction, but how much greater might it have shown had the minds of its people been free from avarice; the fact of this progress by no means discredits the theory. And we individual physicians will be enobled and be made to feel more pride in our work when money ceases to be the chiefest object of our actions. Money, sir, cannot repay us; riches cannot relieve us of our awful responsibility; it cannot help us to that place in the hearts of the people whom we serve, as can a pure devotion to our calling, separated from all considerations but to be benefits to society; and this should be instilled into the minds of the laity, that their doctor, if he be a true disciple of his calling, who goes in and out their homes day by day, who listens with patience to the tales of their sufferings, who is their silent confessor of many a wrong, who submits his body to toils day by day and to storms by night, who is with them in the hour of travail and the day of death, cares more for their

grateful words, more for their sweet sympathy when he is anxious, more for their words of encouragement, than for their gold. God grant that this day will not be long in finding its fulfilment.

Again I remark, Mr. President, that the future will see a more perfect fellowship amongst physicians of our own school; it will see more of concord and less of enmity among them; it will see jealousies and faultfindings growing less and less; they will have little selfishness, and out of this will be born a greater charity; it will see them united for the better ruling of men; not in the matter of the statecraft, or that they will wallow in the quagmire and filth of modern politics, but united to set in motion laws looking to the healthful enterprise of their calling, and to the betterment of physical man. It will see medical societies more flourishing, with larger memberships, and it will see a more wholesome effort on the part of the doctors themselves to encourage such gatherings, and I hope it will see in and among the members of these societies no thoughts of self, no schemings for the places of distinction, but only a full intention to make them occasions of more thoughtful reasoning, of happy commingling one with another, and the mothers from which shall spring true creeds, sentiments of brotherly love, and great inspirations to lead us on. And, sir, I am glad that the women of this delightful and happy little city, the home of beauty and hospitality, have taken the interest to come out to-night, even to hear a prosey address like this, for we are not, many of us, speakers, Mr. President. We are not versed in rhetoric nor trained in oratory, and yet it should thrill the dullest of us when we see listening to us our mothers and sisters and daughters. They are, sir, our friends. With them we have stood at many a bedside and seen fall their gentle tears; with them beside us, we have fought for their children many a battle with the grim giant "Death;" beside them we have stood, and seen them without murmur or complaint, groan in agony for the nourishment of the world, and to them, the mothers of us, and of man to come, do we come and say: "Oh Woman, Woman, the help of man in long ages past, his hope in times to come, we thank thee that thou art endued with heavenly gifts to be our hope and refuge for time, now and forevermore.

But I must hurry on; the State in a few years will take fuller charge of matters medical. This is in some degree true to-day, but health laws and scientific matters are destined to be more largely the concern of the national government. State health boards and municipal health boards are correct and useful institutions, but their scope and duties should be increased and their power amplified, and there should and will be established a uniformity of action between them; to this end we will have a central body Hygienic, which shall have general jurisdiction over, and direct all matters pertaining toward increasing and perpetuating the health of the nation; we will have at Washington a Secretary of Medicine and Hygiene.

There will be fewer medical journals than now; not in the immediate future will this be, but when that era appears in which man's interest will be to serve man rather than his pocket; there may be more given to original work, because the fund of knowledge will be greatly increased, but desks will not be surcharged with a pile of literature, one page of one periodical being another page of another.

There will be an abolition of all obstructions to anatomical and physiological investigasions in the matter of vivisections; no "Gallinger" bills will confront us; no anti-vivisection societies will endanger the progress of our work, because the people will be observant of the good that follows these sacrifices to the science, that the promoters of such schemes and propagandæ will be met with the frown of an indignant public. No obstruction to health laws and to health habits; no opposition to vaccination and no suppression by boards of trade to a full exhibit of all knowledge and information pertaining to existing epidemics. I think, Sir, that this, the last, will be a great step in the way of public benefit; for all of us know how laboriously, how strenuously, how persistently the world of commerce in each burg strives to shut up, within its own walls, all details and histories of fell diseases, because it means to them a loss of dollars and cents, while to their neighbors it may mean suffering and death.

Mr. President, and Fellow Members, I have pictured to you a roseate sky for the future of Medicine; I have pictured to you a future, whose physicians shall bow down to no golden calf, but

who shall have for their High-priestess love of, and their duty to, mankind; I have pictured to you a future when benevolence and right shall be uppermost in men's minds, and love and charity their creed, and I have done this because I believe it. I believe it because I believe the world is growing better; I believe that the blood spilt on Cavalry was not without avail; I believe that eternal justice still sits enthroned; I believe that the faith of the people rests with us; I believe that my brethren's fidelity to their cause is an inspiration, and I believe in the just conception of our art, and in its ultimate triumph.

But to accomplish these ends, to pass to our posterity a heritage full of promise we must labor; singly and united we must work and present ourselves a solid phalanx against false doctrines and heresies; we must purify ourselves by the fire of eternal sacrifice to duty, and must make a masterly struggle with every foe. Progress in all things must meet with obstacles and has always met them; to surmount them is progress. But Medicine will continue the paths it has begun, and just so sure as "truth crushed to earth will rise again," will the truths of its science be finally acknowledged of all men. And so we must go on, for the mountains in our path are growing lower, and we of the present are beginning to see the vast plain of the eternal faith of the people in us; we must answer back when assailed by believers in quackery; when confronted by the mistakes of our forefathers; when told that our beliefs are unfixed and that we battle among ourselves, we must answer back that we ourselves have faith in our art, and that we will continue to labor that you all may have faith in us.

And, Sir, no opportunity must be let pass; there are times in the lives of all physicians of acute observation, when points of great interest to the profession can be noted, and when, even with the most obscure, facts bearing on some hidden mystery of life may be evolved; we should remember these, see to it that they are added to the great storehouse of medical literature for from small observations sometimes grow the most stupendous benefits.

Let not your diffidence cause you to neglect small things; this attention may not make you great, as it did Jenner, who foresaw the future benefits of vaccination from his observations of a

dairy-maid's hands, but it may be comforting for you to know, that to the vast fund of medical lore, to the great mounds of medical literature, which shall guide your children, you have contributed your mite.

I wish to say in conclusion, Mr. President, Ladies and Gentlemen, that from the earliest days of our history, the physicians have been honored members of society; that old Hippocrates, our father, sat in high places with the rulers; that Galen was the trusted friend of the Roman Emperor; that Vesalius, the great anatomist, who disputed the carcasses of criminals with dogs and vultures, that he might dissect them, had for his patron the mighty Charles the Fifth; and in the time to come, while we may have no monuments but grateful hearts, the doctor even more than at present will be an influential member of the social body, a worker for the people's weal; they will be teachers of public morals, and welders of public thought.

I wish to thank the Medical Society, Mr. President, for giving me through its committee this place of honor; as I stand here to-night, and see before me hairs grown grey in their labor of love, and forms bent by the rigors and storms of many a winter, yet fired with the confiict now going on between truth and untruth, facts and myth, science and schism, I feel that I ought to say to the younger members, and that they should say to their younger men, and they to theirs, "Behold what work your fathers have done; behold how they have labored and delved for the good of humanity, and yet, behold we are even now confronted by unbeliefs, by superstitions, and by false doctrines." And we must continue their work; we must wage eternal warfare against our enemies; we must, believing in the justice of our cause, keep up the battle just begun; we must have the courage, that did old Paul Jones of the good ship "Bon Homme Richard". You remember that great sea duel; how one glittering star-lit night this old hulk, an old merchantman with guns on her, her sides gaping, her masts toppling, but girded by immortal genius for one death struggle, you have read of how this autumn night she approached the Scottish coast, and grappled in deadly embrace the English frigate; the story of this struggle will live as long as the deeds of men; you have heard your fathers tell how these two giants of the ocean approached each other nearer,

nearer, nearer, until peak to peak, and mouth to mouth they lashed themselves, while their guns throbbed and hurled death and hell around them. You can picture the fury of battle and see the flashings from these hot-mouthed muzzles mingling itself with the silent light of the stars; you can hear the ponderous sound of the mighty cannon, the shrieks of agony, the crash of timbers, the scream of the shredded rigging, the death cry, and amid it all you can hear the deep tones of that matchless commander move his men to death; you have read of how the ships took fire; of how the sea and heavens were lit by the horrors and panoply of war; you can see the old ship stagger, stagger, stagger, swing apart three times and three times grapple with her foe; you can see the doom of both; you know the end. You know that when the British captain, his dead around him, his ship reeling and helpless, but his batteries still hurling their deadly missiles, himself wounded, when his foeman's fire had for a moment slackened, called out "Have you Surrendered," that this captain of our American navy, this great man, this hero, who had been cast aloof from his home and from his friends, answered back amid the thunder of his guns, "Sir, I have not yet begun to fight." What an inspiration to American seaman, and what a tribute to American valor is this immortal answer, as it comes down to us through the years from the lips of this, the greatest of American commanders; standing himself in the very shadow of death, on the deck of his bleeding, dying ship, he gave to his followers words which shall lead them as long as America's vessels protect America's shores. And, Sir, we of the profession of Medicine have just begun to fight, and because we see struggles ahead (thank God they are growing less and less), we must keep up the warfare now begun; we must and will be conquerors against our enemies.

I wish before closing, to thank you all, Ladies and Gentlemen, for giving me such patient attention; I have given you only my own impressions as to the hidden future of Medicine. I do not believe that very many mysteries of human life will be unveiled for a long time to come, and some of them never; while each year yields us vast discoveries, and important ones, yet the intricacies of life are so varied and deep that the mind of man may never contemplate them all. I have only tried to point out in a

general and disjointed way what probably will transpire in the times to follow; nor do I expect the agreement of all my fellows; as we differ about things present, as we will differ about things to come; the chief dangers to our progress now are the various dogmas and unsafe teaching which are sweeping over our land, arrogating to themselves divine properties and divine powers. To these, chiefly, must we address ourselves, and against these must we wage unceasing warfare. We of to-day, Sir, are the rear-guard of a grand army; we are the van-guard of a grander; they that have gone before have fought their fight; have kept the faith, and have left us an heritage of great principles, of great deeds, of great responsibilities; we, and those that come after us, must look to see these principles and these deeds kept safe and inviolate. We must keep a safe lookout; we must post sentinels; we must put watchmen on our walls, and must leave to our children an heritage, which shall cause them to rise up and call us blessed. And, Mr. President, away down in the ages to come, when the book shall be open, and the old chronicler is asked to tell those then living what of the past in Medicine, he will answer, Write, I saw a mighty fabric woven in the times of myth; I saw it nourished in the time of Cæsar; I saw it greater and stronger in the middle ages; I saw it in early modern times a mighty structure, with its myriads of workers, and its path of destiny; I saw the men of the nineteenth century earnest, and honest, and eager to know, and since I have seen it tower upwards, and upwards, and upwards, until now it has towered above all its enemies, has surmounted all its trials, and stands a mighty and Colossal monument to the power and grandeur of man.

ANNUAL ESSAY.

"The Relation of Bacteria to Disease."

By R. H. WHITEHEAD, Chapel Hill, N. C.

Mr. President, Ladies and Gentlemen:

It has been objected to physicians as a class that they hold themselves too much apart from their fellow citizens, that they make too little effort to cultivate in the general public a sympathy for the scientific aspirations of the profession, and that they thus become associated in the minds of the laity only with actual sickness, as was certainly the case with the little baby, who, when shown the photograph of the family physician, immediately put out her tongue. However that may be, it is doubtless a wise custom of this society which decrees that at least one of its sessions shall be thrown open to the public, and that the subjects discussed on this occasion shall be of a nature likely to appeal to laymen as well as to physicians.

In trying to accomplish my part of this task, I have chosen the subject of the relation of bacteria to disease, to an audience composed only of physicians I should feel it necessary to apologize for this choice. The discovery of the connection of bacteria with many pathological processes has, quite naturally, produced a great deal of discussion in the public press, and much of it is full of erroneous statements. That class of newspapers which has for some reason been dubbed "yellow," frequently published the most extraordinary articles concerning bacteriology, and over-zealous bacteriologists have often heralded forth premature statements of a somewhat alarming nature. It is not strange that the conception of bacteria entertained by the public mind is more or less hazy; that one community is "germ-shy," another not shy enough. Moreover, preventive medicine is bacteriological in its very essence, and we cannot expect to accomplish a great deal in this direction unless our efforts are approved and sustained by intelligent public opinion. For these reasons I have

thought that I might best fulfill my function as essayist on this occasion by attempting to present some of the elementary but fundamental facts of bacteriology.

The bacteria—for which germs, microbes, and micro-organisms are synonymous terms—are exeedingly minute vegetable organisms which reproduce their kind by the simple process of fission —splitting in two. While there is an almost endless variety of them, the simple classification based upon their shape is quite sufficient for our purpose. According to this classification a spherical bacterium is called a coccus, a rod-shaped one a bacillus, and a more or less curved one a spirillum. In this connection it is well to observe that some of the bacteria are capable of motion in a fluid environment, and that this motility is due to certain appendages called flagella, by means of which they are able to dart about oftentimes with astonishing rapidity. A still more striking quality that some bacteria possess is the ability to pass into a so-called resting stage when subjected to certain unfavorable influences. In this condition the organism has changed its shape and apparently also its constitution, is far less influenced by external circumstances than the mature bacterium, and is known as a spore. This spore has the remarkable power of returning to its original condition as a full-fledged bacterium when the environment again becomes favorable to its nutrition.

As regards the natural history of bacteria we are in possession of a very extensive information. We know that, although classed with plants, bacteria feed by preference like animals. Plants, you know, by means of their leaves and roots derive their nourishment from simple stable chemical compounds like water, carbon dioxide, and ammonia; but the bacteria, like animals, demand the unstable organic compounds. In utilizing these substances as food they bring about in them the most profound changes, which fact, as we shall see presently, is of the utmost importance to us. Another fact to be emphasized is that some bacteria derive their nutrition only from dead organic matter, are incapable of multiplication in living tissues, and will quickly perish even should they by any means be introduced into such tissues. To this large class of bacteria the general name of saprophytes is given. On the other hand, those bacteria which thrive on living matter constitute the parasites; these are the

disease producing, the pathogenic-organisms. Fortunately for the the bacteriologist the parasites are also capable of growing in dead matter. This makes it possible to cultivate them in various laboratory media, to study the characters and peculiarities of their growth, to subject them to various conditions favorable and unfavorable to them, and to study their action upon animal tissue at will, and so to identify and to classify them.

At the outset, then, we are met by two great classes of bacteria; the parasites, which can multiply in living as well as dead matter, and which are our enemies; and the saprophytes, which live only in dead matter, and are, for the most part, our benefactors. Through the agency of the saprophytic bacteria the various forms of putrefaction are brought about, by them most of the fermentations are effected, and to them we are indebted for many other useful processes—even the flavor of good butter, you know, is due to bacteria. Moreover, they are the scavengers of the earth. All waste and dead organic matter, whether in the air, the water, or the soil, whether derived from animals or plants, is their food; and in feeding upon it they decompose it into those simple compounds, in which shape alone plants are able to assimilate their food. Thus they are the purveyors to the vegetable world; and since the animal world is dependent upon the plants for existence, it follows, of course, that the bacteria are essential to our existence. Thus they play the leading role in the conservation of matter, that extraordinary economy of nature, which does not suffer a single atom to be lost; they are the active agents in that wonderful cycle from life to death, from death to life again, the constant interchange between the vegetable and animal kingdoms.

So that our modern scientific realism has almost confirmed the mystic philosophy of the old "Sultan of the Persian Song," who said:

> "I sometimes think that never bloomed so red,
> The rose, as where some buried Cæsar bled,
> That every hyacinth the garden wears,
> Dropt to her lap from some once lovely head."

In addition to organic pabulum, the bacteria require water. Some moisture is absolutely essential to their welfare, and simply drying is fatal to many of the pathogenic bacteria.

With respect to oxygen, they vary greatly in their behavior; some will not grow in its absence, others will not thrive in its presence; and many do equally well either with or without that element.

Temperature exerts a very marked influence upon bacteria. All the pathogenic bacteria grow best at blood heat, but while some, indeed, will not grow upon artificial media at even a few degrees below this degree, most of them develop fairly well at ordinary temperatures. Extreme heat has a far more injurious effect upon them than extreme cold. We may say in general terms that all bacteria and their spores are killed by an exposure of a few minutes to a temperature of 180° F. On the other hand, while bacteria do not seem to multiply in ice, they are in many instances capable of existence in it, and are able to resume development when brought into more favorable surroundings.

Again, most bacteria do best when the chemical reaction of their environment is neutral or faintly alkaline; the presence of even a very slight amount of certain acids is quite sufficient to inhibit the growth of many pathogenic germs.

Direct sunlight is one of the most unfavorable influences to which bacteria are exposed in a state of nature—they love darkness rather than light. A great many chemicals, such as corrosive sublimate, carbolic acid, &c., are very fatal to them, and are freely used in surgical and hygienic practice as germicides; but we should bear in mind that heat is, wherever it can be applied, the most reliable of all germicides. It follows, then, from what has been said, that wherever there was waste organic matter, moisture, and ordinary degrees of temperature, there bacteria are developing; in short, they exist almost everywhere. But it may be well to say something as to their presence in certain media; namely, air, water, soil, and food.

In the air, bacteria are quite numerous, though the quantity and quality of them vary much with circumstances which we need not discuss. They are carried about in the shape of dust by currents of air, and are deposited here and there by gravity. There are several facts in this connection to be borne in mind; The saprophytes usually are much more numerous than the pathogenic germs. It appears that ordinary currents of air are unable to dislodge bacteria from moist surfaces; so that the or-

ganisms, in order to be borne in the air, must be in a more or less dried state. For example, we are in no danger of inhaling the bacilli of tuberculosis from the sputum of a consumptive person, even though it may be loaded with those germs, so long as it is wet; it has to be dried and in the form of dust to become a source of danger through inhalation. Again, since complete dessication is fatal to most bacteria—the bacillus of tuberculosis is a marked exception—it follows that they probably do not live in dry air for any great length of time. Furthermore, since air currents do not dislodge bacteria from moist surfaces, bacterial diseases are probably not conveyed directly from one person to another "on the breath."

In all ordinary water, bacteria are fairly numerous, but here, too, saprophytes are the prevailing organisms. Indeed, water seems to be the normal habitat of many harmless bacteria, known therefore as "the water bacteria." In a general way we may state that the presence of pathogenic organisms in water is due to contamination from the outside. But pathogenic bacteria, as a rule, do not thrive in water; for, since the amount of organic mattter in water is usually small, a struggle for existence must take place between them and the water bacteria, in which the latter are at home, acclimated so to speak—and, as the fittest, survive. Then too, running water by the processes of sedimentation and filtration tends towards a self-purification in a comparatively short time. And yet, in spite of the disadvantages under which pathogenic germs labor when in water, the fact remains that drinking water is by far the most common vehicle of infection in such diseases as typhoid fever and cholera.

The superficial layers of the soil, of course, are teeming with bacteria, and it is from this source that water is usually infected. A fact to be noted is that soil is the home of some of the most virulent germs, especially that of lock-jaw—the bacillus of tetanus. This microbe seems to prefer garden soil and that about stables; so that we always regard with suspicion a wound contaminated by this sort of soil.

With respect to the bacteria in food, I can not help thinking that the danger to us from this source has been exaggerated. In the first place, we have a natural aversion to spoiled food; then, too, the muscular system of animals is not attacked by germs;

and, finally, we usually employ such degrees of heat in the preparation of our food as to completely destroy bacteria. There is no doubt, however, that diseases may be conveyed by food, either as the result of insufficient cooking of diseased food, or from contamination after cooking, if the food be of a kind that we usually cook. A fly's foot is very diminutive, but it is big enough to carry many germs. Raw food, such as milk and its derivatives, are much more likely to convey disease. Milk is an ideal culture medium, absorbs readily, and so is liable to contamination from external sources; moreover, if the udder of the cow be effected by a bacterial disease, the milk will doubtless contain the germs of that disease.

We have next to consider the means by which bacteria gain access to the body. First among these avenues is the skin. Since this organ is covered by several layers of horny scales, we may doubt if bacteria are able to enter through an unbroken skin; but it is exceedingly common for organisms to gain access to the tissues through solutions in the continuity of the skin, though such solutions may be the merest abrasions, so slight as to escape observation entirely. Many bacteria live in the secretions of the skin glands, and while the large proportion of these may be saprophytes, still pathogenic organisms are almost normally found there. It is easy to understand how a very slight wound, even though made with an instrument perfectly free from bacteria, might introduce pathogenic germs. It is in the skin that we are especially apt to find the organisms usually associated with the formation of pus—the bane of the surgeon. This discovery and the application of means to prevent the entrance of bacteria into wounds, have, you know, brought about a progress in surgery unprecedented in the history of the art.

Another common avenue for the entrance of germs is the respiratory tract. The upper air passages normally contain numerous bacteria, some of which are parasites; and it is in this region that the dust of inhaled air is arrested. As in the case of the skin, so with mucous membranes, it is permissible to doubt if bacteria pass through them, provided their lining cells are in a healthy condition. Moreover, in healthy animals, investigators have been unable to find bacteria of any sort in the deeper portions of the air passages. Nevertheless, under cir-

cumstances not well understood at present, infection through the respiratory tract, even its deeper parts, is quite common, some of the most serious diseases, such as pneumonia and consumption, being usually contracted through that path.

Another avenue of entrance is the alimentary tract. Certain portions of it swarm with bacteria, some of which are pathogenic, and under certain conditions may seize a chance to enter the tissues. Then, too, contaminated water and food may introduce other more dangerous organisms. But in this case we derive considerable protection from the fact that the stomach usually contains an acid secretion, and acids, as we have seen, arrest the growth of many bacteria. Thus Koch was not able to produce cholera by feeding the germs to dogs until he first neutralized the acidity of the gastric juice.

So that in each case we are provided with barriers, which the bacteria must overcome before they can invade the tissues.

But suppose that a germ has been introduced into living tissue, it by no means follows necessarily that it will be able to exist there—it may or it may not. "A sower went forth to sow his seed. And some fell upon a rock; and as soon as it was sprung up it withered away, because it lacked moisture. And some fell among thorns; and the thorns sprang up with it and choked it. And other fell on good ground and sprung up, and bare fruit an hundred fold." Now, bacteria are just so many vegetable seed. They will not live and multiply except in "good ground." It is a time-worn observation that different persons contract infectious diseases with different degrees of facility. Introduced into the tissues of one man, bacteria may die without even an attempt at sprouting, so to speak; in another they may succeed in growing, but the attack is "mild"; while in a third they find a a suitable soil, and work out their functions. So that in the equation of disease the bacteria, y, are only one factor; and an equally important one is the soil, the unknown quantity x. For we are much in the dark as to the nature of susceptibility to disease. Of course, we may say in general terms that various circumstances, such as poor food, lack of sun light, bad ventilation, damp dwellings, exposure to cold, various forms of intemperance and excess, and certain hereditary states render us more liable to the attacks of germs; but in its essence the problem is

unsolved. If we should ever learn why some tissues are not "good ground" for bacteria in the same way that we know why one soil is unfit for tobacco, and another is unfit for corn, you can easily see that a prodigious step would be taken. Many investigators in many lands are studying the question, approaching it from different points of view, and we may at least hope for success. At present we have only hints, suggestions as to lines of research to be followed, and can only say that living tissues as such possess a certain amount of natural resistance to the bacteria. If this resistance is successful we call it immunity.

The question now arises, how do bacteria act? What weapons do they use in the fight?

Without entering into an account of how the knowledge has been obtained, I may simply state that the action of pathogenic bacteria is due to chemical substances elaborated by them. To these bodies the general term of toxins is applied. For the most part, their exact chemical constitution has not yet been established, though they are believed to be allied to the albumins. Many of them are exceedingly powerful, far surpassing any poisons previously known to us. The weapons, then, which bacteria use are chemical poisons; it is not unreasonable, therefore, it may be remarked in passing, to hope that some day antidotes will be discovered for them, just as we are now in possession of antidotes for many other poisons. These toxins are the agents which produce most of the symptoms of bacterial diseases; for example, we may kill a guinea pig by injecting a liquid in which the bacilli of diphtheria have been growing, but from which they have all been removed, just as readily as by injecting the bacilli themselves. Some of the toxins produce very profound changes in the tissues attacked by them; thus, the toxins of the common pus organisms first kill the tissue in their immediate neighborhood, and then dissolve it. Others, like the bacilli of tuberculosis, bring about a proliferation of the cells which they attack, and this new tissue afterwards dies. According to the relation of the bacteria to the blood circulation, we may divide bacterial diseases into two classes. In the first class the germs are localized to one or more situations in the tissues; but while they are not in the blood, the toxins manufactured by them are absorbed by the blood, and carried by it to all

portions of the body. Diphtheria and lockjaw are good examples of this infection. In the second class the bacteria are living and multiplying in the blood, constantly setting free toxins in greater or less amount, and are removed, to a great extent, from our remedial measures. Of these two cases, it is obvious that the second is much the more dangerous, and far more difficult to treat. However, the division is not a hard-and-fast one; bacteria may be at first localized in the tissues, and later on gain entrance to the blood. Occasionally, the common saprophytes, especially the organisms of putrefaction, give rise to poisoning in a somewhat indirect manner. These bacteria, in some cases, manufacture certain poisons called ptomaines out of the material in which they are living; should these ptomaines be introduced into the stomach in spoiled food, milk, ice cream, etc., they will give rise to symptoms of posoning, in the same way as an overdose of some of the drugs in the materia medica.

These, then, are some of the fundamental facts of bacteriology. Lack of time has not permitted me to mention many other interesting ones, or to even refer to many useful applications of them.

In conclusion, I beg to remind you that bacteriology is a young, a very young science, but its accomplishments are out of all proportion to its age. Mistakes have been made, of course, and will be made—which only amounts to saying that men are human. But it is founded upon the most patient and skillful labor; it has been built up by men possessed of enthusiasm for truth, capable of the most intense application, endowed with clear sight, and wielding intelligence of the very highest order. The very names of such men as Pasteur, Lister, Welch, Sternberg, and a host of others are a guarantee of honest, faithful, and able work. Certainly the day has gone by when we could afford to make a jest of it and to disregard its teachings. Whoever stands in the way of the thing we call progress is soon swept aside. It has yet a vast deal of work to do; as in the case of all progressive sciences, the solution of one problem brings into view others which await solution in their turn. In the meantime, we may not expect it to work miracles, but we should endeavor to maintain towards it an open mind, unbiased by scepticism, and unmoved by the theories of alarmists.

ANNUAL DEBATE FOR 1900.

"The Continued Fevers of North Carolina."

By JAMES M. PARROTT, Kinston, N. C.

IN discussing the continued fevers of North Carolina, I shall exclude of course the simple or ephemeral fevers of a few days' duration, as well as the exanthemata, their complications and sequelæ. I shall also refuse to consider the classical typhoid and malarial fevers of the text books. It is quite an easy matter to make a clear cut positive diagnosis of the typical fever, even to the casual observer.

In many vicinities of North Carolina, particularly in its Seaboard and Piedmont sections, many fever patients are seen annually, the exact nature of whose malady it is very difficult and often impossible to determine. It is about these cases as seen at the bedside in North Carolina that I wish to speak. What are these fevers? Are they really a malarial infection, or one of typhoid fever? Or are they manifestations of an infection of both typhoid and malaria, or a third form of fever of continued nature which has not been recognized and described?

The symptoms of these continued fevers vary much. Indeed it is quite difficult to describe a typical case. Many begin with a rapid rise of temperature, while with others it is slower; in some the pulse is full and bounding, accompanied by a severe headache, congested eyes, flushed face, general integumental redness, and many other evidences of a disease sthenic in character; in others the pulse is more or less gaseous and slow, accompanied by lusterless eyes, mild headache, skin of dull hue, marked lassitude and prostration, giving us a picture of a malady of an asthenic nature. In many cases these types merge one into the other, often the sthenic into the asthenic, and even the asthenic into the sthenic, during the course of an attack.

Some time ago I was called to see Mr. J. W., whose illness subsequently beautifully illustrated the sthenic cases. He was

taken rather suddenly with no noticeable prodromes. When seen on the second morning of his illness he presented a raw-beef tongue, (so often seen in these cases, and generally meaning several weeks of serious illness), severe frontal headache, great restlessness, backache, rapid bounding pulse, general hyperæmia of the skin, high temperature, congested conjunctiva, slight constipation, and rather scanty highly colored urine. For about two weeks these general symptoms continued, accompanied by much nausea, and later by slight abdominal tenderness, but never by delirium of any consequence, even though temperature persisted very high for several days. His symptoms then began to improve, accompanied by several exacerbations of two or three days' duration. He was sick six weeks and convalesced slowly.

Another type: Later I was called to see Mr. P. H. on the 10th day of his illness. His symptoms were almost opposite those above enumerated. He was weak and depressed, and had been from the beginning. When examined he had tympany, no pain over abdomen, occasional free fecal discharge, though generally constipated, tongue slightly coated with a tendency to a sharp red edge. No delirium, generally very quiet and listless, exhibiting a tendency to collapse; pulse weak and gaseous and fever ranging low, from 100 to 101. He remained in this condition for two or three weeks, then began to improve very slowly. Sick six weeks.

Still another type is often seen. In October I was consulted by C. H. on third day of sickness. Complained of pain in limbs, cold chilly sensations, foul odor to breath and bad taste, and tongue presented a peculiar condition often seen, and always indicates three or four weeks' illness; it was coated white and had the appearance as though tissue paper was pasted over it, and was slightly red-edged, though large and flabby, and presented teeth indentations, as do most all tongues in adults in Eastern North Carolina when sick. He complained of very great depression; pulse was slow and weak; there was no nausea and no pain in the abdomen, though slightly typanitic and constipated. No rose-colored spots appeard during the attack, and at no time was he delirious. Temperature ranged for first ten days from 102 to 103, suddenly dropped a little, then ran an even downward course, gradually growing less until at the mid-

dle of the third week it reached the normal. Positive Widal re-action dil. 1-40 ; time exposed, one hour ; no malarial organism found, and quinine had no effect on temperature.

The following interesting case treated last fall in Cuba has a counterpart which is often seen in Eastern North Carolina. Trooper W. C. gave history of previous malarial attacks when taken ; temperature rose rapidly and ranged high, tongue coated, large and flabby, headache, slightly nauseated, no delirium, liver and spleen enlarged, some abdominal tympany but no pain, pulse weak and slow, patient generally quiet and lassitude marked. Duration of attack, three and a half weeks.

Crescent and aestivo-autumnal malarial plasmodii found in blood. Widal test always negative, thoroughly cinchonized and kept so for some time; then quinine continuously administered but in smaller doses, aestivo-autumnal organisms rapidly and promptly disappeared, but even after cinchonism could very often find the crescent organism. especially in the splenic blood. What caused this fever to continue ? Was it the toxæmia from the æstivo-autumnal plasmodii, or the direct result of the crescent organisms themselves ? Very probably the former, for reasons which are obvious and which will be discussed later.

These four cases illustrate very nicely the different types of the continued fever under discussion. Others, however, though not presenting such marked differences, could be mentioned, and to these might be added those which continue for many weeks and are of a very low grade and resemble case No. 2 above mentioned, except that fever is somewhat lower and lasts much longer. Now, then, the question is, what are these fevers, and to what are they due ? To answer this intelligently many problems must be solved : the causes which lie behind all fevers considered, every sympton discussed in detail, the idiosyncrasy of the subject thoroughly understood, and the different methods of treatment weighed.

In all cases of fever, whatever may be the cause, there is oxidation and increased combustion. A certain per cent. of the energy which should go to form tissue or to repair waste cell is diverted from the normal course ; it manifests itself in obedience to certain physical laws in the shape of animal heat, and there is consequently a rise of temperature. Acids are produced as a

result of this increased oxidation. This combines at once with certain salts to form bases. These acid and base forming processes take place back in the extra capillary structures, and, of course, there is to a certain extent a lessening of the normal alkalinity of the blood. This abnormal condition stimulates the the thermic centres, and as a result there is again an increase of temperature through physiological reactions. Once these processes are begun they must either be checked through nature by medication or else by nature alone. In many cases of a long continued fever of a very low temperature, say from 99 a. m. to 101 p. m., I have no doubt that this is the true cause, especially those of the so-called gouty diathesis.

Another point to be considered in discussing the continued fevers of North Carolina is the idiosyncrasy of the patient. We are all acquainted with peculiar effects of quinine, morphine and other drugs upon certain people. The cinchona alkaloids cause in some cases asthma, in others, an eruption with severe nervous symptoms ; in others still, the most violent congestion of the kidneys, with accompanying hemoglobinuria or hematuria, and so on. These effects are denominated the idiosyncrasy of the patient. May not patients have an idiosyncrasy for malarial or typhoid poisons ? I have seen peculiar cases of both these fevers which I thought might be due to an idiosyncrasy of the patient for the particular infection.

Again, that quinine is a specific for the amebic forms of malarial organisms I do not doubt. So that when a malarial infection in which only the amebic form of the parasite is present if it is properly treated with quinia the temperature should be markedly affected and the patient promptly relieved, provided it is in an uncomplicated case and the excretory organs are functioning properly. The question is what do you consider the proper way to administer quinine ? It is not my purpose to discuss the treatment of malarial fever, but a few remarks right here may not be out of order. As I have said before, quinia will promptly and certainly destroy the amebic forms of malarial parasite, hence it should be administered before the paroxysm. The simply giving of quinine by the mouth without regard to its digestibility is a practice to be condemned. The most scientific, and, of course, the most accurate way to administer it

is by the hypodermic needle. This is not always desirable, however, and indeed it is not often necessary. I once saw a case in which large doses of quinie were given by the mouth and had been for sometime, and yet it was easy to demonstrate the presence of the æstivo-autumnal organisms in the blood. Hypodermic injections of the cinchona were advised and given. They acted nicely and the patient was promptly relieved. In this case the quinia was not digested and the attending physician evidently thought the nervousness and its attending manifestations, and a severe nausea produced by the alkaloid to be the symptoms of cinchonism, and decided that he must be dealing with a case of typhoid fever since the patient grew worse instead of better. The discovery of the parasite in the blood and a careful investigation soon unravelled the mystery, however. Quinia in this case by the mouth aggravated the condition of the patient.

Again there is no doubt in my mind that many cases of severe malarial and so-called gastric or ephemeral fever, are continued and aggravated by errors in the diet. I have seen one case of typical typhoid made antypical by such a mistake. I consider the diet a very important feature in the proper treatment of malaria, and the most important by far in the treatment of the so-called gastric and typhoid fevers. There are a few facts which I would mention especially. The most easily digested all around food is the one that should be selected. When carefully prepared, predigested soup and milk is the best. The patented proprietary meat extracts, and so-called peptonoid foods so commonly sold are generally to be condemned. In my limited experience I have always been highly pleased with the results obtained with good home-made soup and fresh sweet milk. Many cases of fever, in which the diet has been neglecied, presenting the typhoid conditions, viz: muttering delirium sordes on the teeth, hard, dry brown cracked tongue, feeble pulse, etc., are rapidly improved by wholesome food stuffs properly given; by this I mean administered regularly, and with due regard for common sense, and generally recognized physiological laws.

In some cases of continued fever the excretory organisms do not eliminate the toxin or germ poison, because of their previously enfeebled condition. The case of the trooper whose case I have

given above is a splendid illustration of this condition. In this patient the excretory organs had been enfeebled by several previous attacks of malarial, and after the quinia had destroyed the æstivo-autumnal organisms the fever was very probably continued by the persistent presence of the toxin, should there be such, of the parasite. I am not prepared to say that in this and other similar cases that crescent form of the organism produces the continued temperature.

Manson and other prominent observers have taught us that the crescent organisms is a regenerative type of the parasite. If this be true, very probably a careful daily examination of the blood of these patients after quinine has been discontinued would demonstrate the presence of the organism more fully developed, and the long continued use of the cinchona alkaloids should eventually free the patient of the crescents by destroying their source. This might be equally true should the crescent prove to be a degenerative form of the parasite. There is one thing, however, about which we are all positive, and that is that in all cases of remittent malarial infection the fever continues more or less for a longer or shorter period after the organisms have disappeared. If it be true that in otherwise healthy persons and whose organs were normal before the attack, the temperature persists for short time after the destruction of the parasite because of malarial toxin, why is it not equally true that it might continue a longer time in one previously debilitated and whose organisms were functioning below normal prior to the infection causing their inability to throw off the poison?

To the student of medicine, one of the most striking features of disease is the marked difference along certain lines of the same disease in different sections, and of the close resemblances of these differences in certain other sections. There are charateristic and striking symptoms which are common to many infections in localities of the same general hygienic conditions.

To illustrate: the peculiar action of the pulse in yellow fever is seen very often in other diseases in the tropics, especially in fevers.

Last summer while in Cuba, I noticed quite often that on the third day of a remittent malarial attack, instead of the pulse continuing rapid as it should in a typical case, it would fall

in frequency very often as low as fifty per minute, and after a few days regain its former ratio to the temperature. I have made the same observation concerning the temperature. All of us who live in a malarial district are familiar with the phenomenon of the third-day aggravation of symptoms, and also that in all these cases of whatever nature, that quinine to a more or less degree will prevent more or less this periodical exacerbation. This is a common every day experience. Why are not other symptoms of other fevers affected by the same cause, whatever that may be? From these and other observations I am led to believe that the environment of germ and patient has much to do with the symptoms of any fever infection for this reason; those of us who live in the Piedmont and Seaboard sections of North Carolina may expect to see typhoid fever manifest itself in a very different manner in many instances from that of the mountain districts. Improved sanitation because of better drainage, and other accompaniments of progress have changed the environment of germs, especially of typhoid fever, and of man; hence those of us who live in Eastern Carolina no longer so often see the old time typhoid fever with its classical symptoms, but in its stead there has developed another fever which in my opinion is, in the majority of cases, typhoid being marked by many symptoms not seen with it before.

In closing the consideration of the causes of the atypical continued fevers, I might add here that there is no doubt that many cases of continued fever are not really continued fever in the common acceptation of the term, but sometimes there is an error in diagnosis. I recall the case of a gentleman whose disease was diagnosed typhoid of an atypical type, and yet which on close examination proved to be an abscess of the liver. We cannot be too careful to diagnosing any atypical fever as a continued fever, for after all, close, conscientious work at the bedside will prove that they are less frequently seen than the careless observer would suppose.

Diagnosis: So much for the causes of the atypical fevers seen in North Carolina. To us, as active practitioners, the most important question, except the treatment, is the diagnosis. Every conscientious physician is frequently non-plussed by this question. He is undecided as to whether this case is typhoid or

malarial, or a third form of fever neither typhoid nor malarial. So far as I am concerned, I have not seen enough of these fevers to convince me that they are anything else than either typhoid or malarial. Oxidation and the consequent diminution of the normal alkalinity of the blood, the idiosyncrasy of the patient to the infection, the faultiness in the administration of quinine, and possibly, its inability to effect the crescent organism, together with the fault in diet, the effect of environment on the germ and its toxic manifestations as well as on patient, added to improved or changed sanitary conditions, and the errors made in diagnosis can and do account for all of the atypical types of malarial or typhoid fevers seen in North Carolina. The elimination of the so-called third form of fever from the discussion narrows the question to a consideration of the differential diagnosis between the typhoid and malarial fevers of the atypical type. In an attack of atypical fever it is seldom that one can derive any benefit from a study of the outset. In either typhoid or malarial fever it may be slow or sudden. A close study of the temperature for four or five days assists us much should quinine be administered. By this time the temperature should be very much modified in atypical malarial infections. The temperature in many cases of typhoid in Eastern North Carolina will rise quickly, run a high course for six or eight days, then suddenly drop, even if no quinine be given, one to three degrees, then running an uneven course, though gradually diminishing until the normal is reached. In many cases, unless carefully considered, this sudden drop of the temperature on the sixth or eighth day will prove misleading, especially if quinine has been administered. In all cases of simple typhoid infection the temperature, though often remittent, is less distinctly so than in malaria. In many cases of typhoid fever seen in Eastern Carolina distinct paroxysms can often be made out, thus resembling malarial fever. There is more bronchitis in typhoid than malaria fever, though it may be present in either. Nose bleed is very rare in malaria, and when present, unless in one predisposed to it, it should be regarded with suspicion. It is a more important symptom of typhoid fever than generally admitted.

A study of the circulatory system is of little value in the diagnosis of either infection. The expression may or may not be

dull and heavy, and the conjuntiva and cheeks may or may not be flushed in either disease. The tongue, usually considered as indicating much in fever, is of little value in Eastern Carolina, except in certain cases. I have seen it coated, large and flabby, with teeth indentations in typhoid, and I have noticed the red-edge, sharp pointed, typhoid tongue in malarial fever. There is a tremulousness about it which is often present in typhoid but seldom in malaria. One important diagnostic sign is the early appearance of anæmia with an icteroid hue in malarial fever, while in typhoid fever the jaundice is not seen at all and the anæmia not before the end of the second week. Severe gastric symptoms are sometimes present from the very beginning in typhoid fever of the Seaboard section, though it is not so constant as in malaria. This is probably due to the tendency to visceral congestion so universally present in malarial sections. Intestinal symptoms so marked in the mountain region are of some value to us in the East, though not of so very much importance. I have seen malarial fever with a pronounced abdominal tenderness and tympanitis as are usually found in typhoid, and typhoid with as little abdominal symptoms as are generally present in malarial fever. Constipation is as frequently seen in typhoid fever of the East as in malaria. The typhoid eruption is of much diagnostic value, and though very often but few spots can be found, yet I believe they are present more or less in all cases. I have not been able to derive much help from a study of the liver and spleen in these cases. Nervous symptoms are more pronounced in typhoid than in malarial infection. There is no doubt that the mosquito transmits malaria. In my opinion this is the only way in which man is infected. The accurate determination of the exposure or non-exposure of the patient to the ravages of this insect, especially the anopheles claviges, is a very important point in the differential diagnosis.

Stupor, subsultus tendinum, muttering delirium, sordes on the teeth, etc., when present are generally due to errors in diet.

While a close study of the patient, the history of the case, the symptoms presented along the lines indicated above will enable the conscientious physician to arrive at a satisfactory diagnosis, yet in spite of all this he will find himself in the dark. There are three tests which if applied intelligently and considered col-

lectively will make the diagnosis positive sooner or later.

With the chemical test I have had no experience. I have never been in doubt after trying the other two tests and have therefore never used it, but I see no reason why the diazo-reaction should not be of service in many instances. As to the therapeutic test (the administration of quinine) I have this to say, that while it is so often invaluable, yet we should not permit ourselves, if possible to avoid it, to needlessly drug our patients. If we must use quinine to determine the character of every case of fever may we not do much harm to our patients? I am sure that a case of so-called gastric fever would be much injured by it, and I feel quite confident that it brings about mischief in typhoid fever in many ways needless to mention here. I believe its diagnostic value is over-estimated. We usually say that should the temperature be markedly affected by it in three or four days that it indicates malaria. So it does very often, but sometimes not. For example: on the sixth day of her illness I was called to see little Miss M. She had typical typhoid fever. On the eighth day of her illness her temperature dropped two degrees and then ran the usual course. No quinine was given. Suppose I had administered large dose of the alkaloid the two days previous using this test alone, I would have declared at once that I was dealing with malaria.

If a careful daily record of the temperature of typhoid fever seen in Eastern Carolina be kept, very many similar cases would be found. Again, suppose we have a low remittent malarial infection engrafted upon a subject whose excretory organs were functioning much below normal, so low as to be barely able to throw off the poisons naturally produced by the economy, should we not expect to find the fever actually continued if not increased by quinine? I think so. This alkaloid throws extra work on these already over-burdened organs, and makes it practically impossible for them to rid the system of the toxins produced by the disease. So that in a case like this we would say that it was typhoid should we depend upon the therapeutic test alone. There is no doubt that quinine is one of the most badly abused of all drugs; and its indiscriminate use in therapeutic diagnosis should be severely condemned.

A careful microscopic examination of the blood will demon-

strate practically to a certainty the presence or absence of malarial organisms. Just here let me say that sometimes the administration of a large dose of ergot two or three hours before the examination will bring out an otherwise hidden organism. If the malarial plasmodii are found we should then satisfy ourselves that there is not also a typhoid infection. To do this we have a test which in careful hands will prove a most valuable one, and that is the Widal reaction. I shall not discuss it here. I believe it to be thoroughly reliable when properly done. This much I will say, that the stock cultures should be transferred from agar to agar every three or four days, and kept at room temperature. The test should be made with bouillon culture from 10 to 18 hours old at normal temperature, and the serum mixed in the proportion of 1-30 with 1 hour time limit. This in my experience has proven itself to be the best method. There are several objections to this test, however, from a diagnostic point of view, chief among these being the lateness in the course of the disease when it is demonstrable, and the fact that one must be more or less of an expert in its application. This last objection can be urged against the microscopical test for malaria with equal force.

Sometimes we see in North Carolina a fever which has a tendency to be continued which does not show the malarial organisms and does not respond positively to the Widal reaction. Those cases which I have seen were no doubt due to intestinal bacterial infection. I do not consider this fever as a continued fever, hence shall not discuss it. This type of fever is of much importance, however, and this much should be noted when discussing continued fevers, that the lack of proper medical attention will sometimes permit it to run a longer course than it should. For instance, if the stomach be very irritable, as it often is in these fevers, the persistent use of quinia with the idea that it is malaria, and a refusal on the part of the physician to administer a purgative, fearing if it should be typhoid that it might produce an uncontrolable diarrhea, (and I have seen a physician manifest such a ridiculous fear) this fever will last much longer than usual, and will be of a continued nature.

As to the treatment of the continued fevers of North Carolina, I have nothing especially to offer. The proper management

of the case after the diagnosis has been made is an important and serious question. The course outlined in any up-to-date text-book for the typical cases of malarial or typhoid fevers apply with equal force to these atypical forms which we have been discussing.

My own experience, and my observation of the practice of others, have taught me that probably the three most important things for North Carolina doctors to guard against in the treatment of these as well as other fevers, are; first, the reckless use of quinia; second, the over-dosing of typhoid fever patients, and third, the lack of thoroughness in reference to the diet.

PEDIATRICS.

Infant Feeding.

By J. C. WALTON, Reidsville, N. C.

A THOROUGH understanding of the conditions of nutrition is the most important part of the groundwork of Pediatrics, and no physician can successfully treat the diseases of infancy and childhood without correct ideas in regard to the feeding of a child during the first few months of its life. Bad feeding may not only produce indigestion, diarrhea, marasmus, etc., but the seeds are often sown for chronic indigestion, rickets, and general malnutrition, and these conditions are the most important, predisposing causes of the diseases of infancy. It is not simply a question of knowing how to save a child's life, but to employ those measures that will conduce to a healthy growth, and a normal development of all the organs of the body.

In building up the cells of the body, the proteids are first in importance, the carbohydrates second and the fats third. As heat producers, the fats come first, the carbohydrates second, and, practically, the proteids should never be called upon for this purpose. In a proper diet, all of those elements should be combined. Owing to the indigestibility of proteids it must be first reduced, but children fed on low proteids must be closely watched, as it is always hazardous to keep infants long on a food which is both low in proteids and fats. Mother's milk is, of course, the only perfect infant food, and should be used as the standard in preparing all other infant foods. Unfortunately, the number of mothers who cannot nurse their infants is simply appalling. One of the most prominent Pediatrists in this country says that not more than one-third of the mothers in his city are able to nurse their children, and here, in our healthy climate, you may find a great many mothers who are unable to do the same. Clinical experience has proven that the only available and perfect substitute for mother's milk is modified cow's milk.

Breast milk and cow's milk differ in important details, but cow's milk, with the addition of water, cream, and milk-sugar, can be made to conform very closely to that of mother's milk. Breast milk contains 4 per cent. fat, 7 per cent. sugar, and 1½ per cent. proteids, with salts and water, and is alkaline in reaction; while cow's milk contains about 4 per cent. fats, 4 per cent. sugar and 4 per cent. proteids, with salts and water, and is acid in reaction, and contains bacteria; or, in other words, mother's milk, roughly speaking, is 4, 7, 1½, against 4, 4, 4, of cow's milk. The latter contains the proper proportion of fats, about one-half the proportion of sugar, and about three times as much proteids. The proteids of cow's milk have to be reduced by diluting and is more difficult of digestion than the proteids of breast milk. The proper proportion of sugar can be brought up by adding cream. Enough food should be prepared in the morning for one day's feeding only. The milk-sugar should be dissolved in boiling water, and filtered if necessary, then poured in a pitcher and the cream and lime water added, then divided into the number of feedings required for the day, each feeding being put in a separate bottle, and stopped with absorbent cotton. The bottles should then be cooled rapidly by standing first in tepid and then in cold water, and afterwards placed on ice. If the milk is to be pasteurized, this should precede the cooling. To obtain the cream, which is practically superfatted milk, a jar of average cow's milk is allowed to stand in a cool place for five hours, and the upper one-fifth removed, which will contain 12 per cent. fat (that is 6 oz. from 1 qt). I append a few formulæ with directions for converting cow's milk into a proper infant food from the third day to the tenth month. It must be remembered that these formulæ are merely illustrative, and, like prescriptions, only meant to apply to their particular cases, the percentage being changed from time to time to meet the infant's growing demands. A cow's milk contains, necessarily, great numbers of bacteria, sometimes pathogenic, which may produce serious diseases, such as typhoid fever, diphtheria, dysentery, tuberculosis, and many forms of diarrhea, especially so in hot weather, when the utmost care should be taken in the handling of milk. It is better pasteurized than sterilized (212 Far. heat), as sterilizing renders milk less digestible and more constipating, impairs its nutritive pro-

perties, and should never be used as a food for any length of time, as rickets and scurvy frequently develop after its use. Pasteurized milk, by means of Freeman's pasteurizer, where the heat is only carried from 155 to 170, will kill the germs without impairing the digestibility or affecting the taste of the milk, and it will keep for two or three days. In the country where pure, fresh milk is obtainable, it is not necessary to pasteurize, but in the city it should be done, and milk should be kept scrupulously clean, and in a cool place, as a low temperature inhibits the growth and development of bacteria. In the gastro intestinal and diarrheal diseases of infancy, milk should never be given, and its use should be absolutely prohibited until convalescence is well established, as in these cases, milk acts an ideal culture field for bacterial growth, and it is not improved by giving it sterilized for it will not remain sterile any longer than swallowed in a septic stomach or bowels. Further, if the disease becomes established and inflammation takes place in the bowels caused by the bacteria and their product, and rest being absolutely important in the treatment of an injured organ, this the milk will not allow, as a large portion of it must pass through the entire length of the intestinal canal. The diet in this form of illness must consist of food which will be absorbed direct from the stomach, and not from waste matter and furnish culture medium, and act as a local irritant.

For years I have almost discarded the use of milk in typhoid fever. I rarely have tympanitis and the diarrheal and other symptoms are much more easily controlled, and the mortality very much lessened.

Peptonized milk, (the milk being partially or completely digested), may be used for infants who have great difficulty in digesting the proteids or curds, and during an attack of acute indigestion. Completely peptonized milk should not be used for a longer period than a few days or weeks; partially peptonized milk may be used for two or three months, but not indefinitely, and should be left off gradually by shortening the time of peptonizing and lessening the amount of powder used. To peptonize, dissolve 5 grs. Pancreatin, and 15 grs. Bicarbonate of soda in a gill of water, and add milk to one pint, putting this in a vessel of hot water at 120, and leave for ten to twenty minutes, then remove, cool rapidly and put on ice.

Condensed milk: Sometimes we are obliged to use condensed milk in poor people, who are unable to buy fresh cow's milk. As ordinarily used, in a dilution of one in twelve: This dilution would give us five-tenths fat, six-tenths proteids and 4 per cent. sugar. A child could sometimes do well for a short period on this food, but the percentages are too low, and may be improved by adding meat broth made by boiling good lean beef, 1 lb. to a qt. of water, until the liquid is reduced to one pint, so that one part of condensed milk is added to twelve of the broth. This mixture will contain five-tenths fat, one-fourth proteids and 4 per cent. sugar; this will answer for a child three months of age. The additional fat being supplied by the use of cod-liver oil. At six months, one part of condensed milk is added to nine of the broth, the per cent. will then be 1.75 fat, 1 per cent. proteids and 5 per cent. sugar. This, with the cod-liver oil, will last until the ninth month, when the critical nursing period is past, when barley and oatmeal gruel and other meal mixtures may be allowed. Condensed milk fortified may be made an acceptable diet for infants. Alone it is a food upon which a certain number of children exist until age or change of conditions allow a better diet, and, inasmuch as there is nothing to take its place among the very poor, its value to them is inestimable.

In cases where milk temporarily disagrees, beef juice and farinaceous foods may be substituted, and for short periods, infants' foods may be given, but only temporarily and as a makeshift, until the stomach is in a condition to take other food. Infant foods are greatly inferior to modified cow's milk, and often used they are capable of doing, and have done, much positive harm. There are two diseases, rickets and scurvy, which frequently follow their uses, and they should be prescribed, like drugs, knowing what they do and what they do not contain.

If the infant ceases to gain in weight, I increase all of the per centages; at the onset of illness I diminish them by diluting them with an equal quantity of water to suit the enfeebled digestion. If there is habitual colic, especially with curdy stools, diminish the proteids, if there is constipation, increase the per centage of fats, for frequent thin yellow stools or sour vomit, lessen the fat. During the hot months, make the proportion of cream less than in cold weather, and during excessive heat, it

should be very much less, and water should be given freely. Frequently, the cause of vomiting in children, shortly after eating, is due to too much feeding at one time, or taking food too rapidly. Sugar seldom gives trouble, except that a lack of it interferes with growth and an excess sometimes produces fermentation. Mixed milk from a herd is better than the milk from a single cow. Never allow an infant to nurse longer than twenty minutes.

I trust the fellows of this Society will agree with me that this per centage modification of cow's milk for infants is not too complicated for the average physician. Simple as it is, this scientific, rational, accurate and satisfactory method of baby feeding is but little practiced by our physicians. Still it is the clearest and most practical advance in infantile therapeutics, and one in which America has taken the lead of the world.

Authorities referred to are Holt, on "Diseases of Infancy and Childhood," and Kerley Clinical Lectures, New York Polyclinic.

Formula I. (Third to fourteenth day.)

	Quantity of each required to make.			
Ingredients.	12 oz.	16 oz.	20 oz.	24 oz.
Milk.....(ounces)	1	1¼	1½	2
Cream .....(ounces)	1	1¼	1½	2
Limewater.....(ounces)	¾	1	1½	1½
Water.....(ounces)	9¼	12½	15½	18½
Milk sugar (even tablespoonfuls)	1½	2	2½	3

Formula 1 contains 6 per cent. sugar, 2 per cent. fat, proteid, 0.6 per cent.

The amounts mentioned are those for 24 hours. There are required at this time ten feedings in 24 hours, which should be given every two hours from 7 a. m. to 10 p. m., and every four hours from 10 p. m. to 7 a. m.

—Holt.

Formula II. (Second to sixth week.)

	Quantity of each required to make.			
Ingredients.	20 oz.	24 oz.	28 oz.	32 oz.
Milk.....(ounces)	2	2½	3	3¼
Cream.....(ounces)	2	2½	3	3¼
Limewater.....(ounces)	1½	1½	1½	2
Water.....(ounces)	14½	17½	20½	23½
Milk sugar (even tablespoonfuls)	2½	3	3½	4

Formula II. contains Fat 2.5 per cent; sugar, 6 per cent; proteids 0.8 per cent.

Feedings in formula II. are same as in formula I. only the amount may be increased to as much as 32 oz. in twenty-four hours in robust children.

—Holt.

Formula III. (Sixth to eleventh week.)

Ingredients.	Quantity of each required to make. 24 oz.	28 oz.	32 oz.	36 oz.
Milk.....(ounces)	3	3½	4	4½
Cream .....(ounces)	3	3½	4	4½
Limewater.....(ounces)	1½	1½	1½	1½
Water.....(ounces)	16½	19½	22½	25½
Milk sugar (even tablespoonfuls)	3	3½	4	4½

Formula III. contains: Fat, 3 per cent; sugar, 6 per cent; proteids, 1 per cent.

Eight feedings are required in 24 hours, every 2½ hours from 7 a. m. to 10 p. m., and one feeding between 10 p. m. and 7 a. m. An average child starts with 24 and increases to 34 oz., and a robust child starts with 24 or 28oz., and increases to 36oz.

—Holt.

Formula IV. (Tenth week to fifth month.)

Ingredients.	Quantity of each required to make. 28 oz.	35 oz.	42 oz.
Milk.....(ounces)	8	10	12
Cream .....(ounces)	3½	4	5
Limewater.....(ounces)	1½	1½	2
Water.....(ounces)	15	19½	23
Milk sugar (even tablespoonfuls)	3½	4½	5½

Formula IV. contains 3.5 per cent. fat; sugar 7 per cent.; proteids 1.5 per cent.

Seven feedings in 24 hours; every three hours between 7 a. m. and 10 p. m., and one feeding between 10 p. m. and 7 a. m. An average child will begin on 28 oz. and increase to 35 oz. A robust child will begin on 35 and at the end take 42 oz.

—Holt.

Formula V. (Five to ten months.)

Ingredients.	Quantity of each required to make. 30 oz.	36 oz.	42 oz.	48 oz.
Milk.....(ounces)	11¼	13½	15¾	18
Cream .....(ounces)	3¾	4½	5¼	6
Limewater.....(ounces)	1½	1½	2	2
Water.....(ounces)	13½	16½	19	22
Milk sugar (even tablespoonfuls)	4	4½	5½	6½

Formula V. contains: Fat, 4 per cent; sugar, 7 per cent; proteids, 2 per cent.

Should be given every 3 hours from 7 a. m. to 10 p. m., but no feedings between 10 p. m. and 7. a. m.

—Holt.

Hypertrophy of the Pharyngeal Tonsil and Its Treatment.

By J. T. J. BATTLE, Greensboro, N. C.

This tonsil is also known as Adenoma, Luschka's, or third tonsil, or post nasal growths and adenoid vegetations.

This is principally a disease of childhood, generally appearing before the tenth year is reached. Heredity has a very significant bearing and is an important factor as to the causation of these growths. Dr. Mackie, of Nottingham says that "I scarcely see a case of adenoids, say in a child, but where there is an arthritic or migrinous parentage."

The lymphatic diathesis in which the lymphoid glands are so very susceptible to inflammation and enlargement, is undoubtedly transmitted from parent to child.

This tonsil develops very rapidly during the early years, is easily irritated and every attack of congestion from whatever cause leaves it larger than it was previous to the attack, as lymphatic glandular tissue has exceedingly poor recuperative powers, it fails to regain its former healthy condition, and hence is not only hypertrophied to a certain extent, but is more vascular and the readier to catch and absorb any germ which may come in contact with it. Diphtheria, the exanthemata, repeated attacks of coryza or any disease which may bring on congestion of the

pharynx is responsible for an increase in its size. A child with this gland enlarged is decidely more liable to contract the contagious and infectious diseases, and in diphtheria it makes the treatment much more difficult.

The gland is composed of lymphoid follicles and adenoid tissue and in the youngest the growth is generally soft, yielding and very vascular owing to the preponderance of the lymphoid tissue, while in older children it is harder and more fibrous as the stroma is most developed. It varies in size from a pea to a peach kernel, it may be pednuculated or have a broad base.

One of the most prominent symptoms in a typical case is the open mouth, and upon closer inspection it is noticed that the normal lines of expression are absent from the face, there is often and in some cases constantly a sero-mucous, or muco-purulent discharge from the nose, the eyes may be prominent, the base of the nose is broader than normal, this condition makes the little sufferer appear simple, and if not relieved it not only appears so but is actually dull and stupid, and is inclined to stay indoors and is devoid of animation, is absent minded, and inattentive which may be due to defective hearing or dullness.

There is rhino-pharyngeal catarrh, and there is considerable difficulty for the patient to blow the nose owing to the growth almost or entirely closing the posterior nasal apertures. Deafness is a frequent symptom and may be caused by an inflammation into the eustachian tubes causing an otitis, or the opening of the tubes may be encroached upon and closed by the enlarged gland thereby causing a difference in the density of the air on the two sides of the tympanum, or the opening may be closed by mucus causing periodical difficulty in hearing. Hypertropic whinitis is often present, and treatment for this is generally unsuccessful unless the tonsil is first removed. The voice is nasal in character, resonance is diminished, occasionally hoarseness exists, impediment in speech sometimes follows. If the enlargement is sufficient to close the vocal chambers it is impossible to train the voice—words with certain letters are not accurately pronounced. The shape of the vault is considerably altered, it is narrowed and elevated, and in consequence the septum is encroached upon, it is then forced to bend to one or the other side, and we have the deviated septum.

Sleep is not sound and refreshing as it should be, but is disturbed by dreams and nightmares, at times, often awakes in a scream, breathing is irregular, with snoring, and the child throws itself about the crib and assumes various positions, often lying on the face evidently to drain the mucus from the throat or trachea, so that breathing may be easier. Imperfect rest affects the general health and the nervous system especially. Pulse may be irregular, palpitation is at times troublesome. Eneuresis may be relieved by removal of this tonsil; also, cases of chorea being cured have been recorded.

As the babe can breathe only through the mouth, its manner of nursing is characteristic, the nipple must be turned loose every few moments. Asthma, which causes the deformity which is called the "barrel chest," is, or may be due to this troublesome gland. Pigeon breast may also be caused by the prolonged interference with normal respiration.

With several of the foregoing symptoms we are justified in making a more thorough examination. Rhinoscopy with the average child is exceedingly difficult and if not impossible is altogether unnecessary, as a digital examination is easily made and the diagnosis is settled. The way I have found most satisfactory, is for the child, if not old enough to stand up, is to have it sitting on the nurse's lap, and she is asked to hold the patient's hands. If the child is several years old, I have it to stand up. Standing by the patient I draw its head against me, my left arm around its neck and hand on left jaw, the mouth is then opened, if not voluntarily by the patient a little manipulation by the physician will accomplish the object, the index finger of left hand then presses the jaw between the gums or teeth, and that is an efficient gag and is not repulsive to patient or parent. With the child's hands under control by nurse or assistant the index finger of right hand is carried through the mouth up behind the palate and against the pharyngeal wall. If the tonsil is abnormal a soft or rather hard mass, owing to age of child, is felt, and it feels something like a roll of earth worms, and the space between palate and pharyngeal wall is almost occluded, and the finger on being withdrawn is generally bloody. As to treatment, washes, sprays, gargles or caustics are very unsatisfactory, but extirpation gives prompt and the wanted relief. To

operate I prefer to have the patient lying on the back on a padded table, with the head lower than the body and low enough to keep the blood from running down into the trachea, the anæsthetic is administered, mouth gag in position, and a reliable assistant to steady the head, with a Gottstein's curette passed well up in the vault of the pharynx, the handle is raised up against the upper front teeth then a firm downward movement generally brings most of the enlargement away, and with two or three such movements the hypertrophied tissue is all removed, the finger is passed in to find out if any remains, if so it can be scraped away with finger nail, or if unyeilding the curette can be re-introduced and the work completed. The openings of the eustachism tubes must be re-membered and not injured. See that none of the growth is left hanging in the throat by the pharyngeal membrane being still in tact, the patient is now turned on side for the blood to flow out of mouth or nose.

I have always used chloroform as the anæthetic, pushed only to the second stage, as in this stage the reflexes are not abolished, and if any blood should get into the trachea it will be coughed up. Ether causes too much frothy mucus to be secreted and encourages hemorrhage. Ethyl bromide or nitrous oxide are highly recommended, and if the oral tonsils do not have to be removed I think would be preferable to chloroform.

Any after-treatment for the pharynx is unnecessary, but a simple antiseptic solution as spray, or gargle, can be used if desired.

Cough.

By EDWIN GLADMON, Southern Pines, N. C.

In response to a request for a paper before the section on Pædiatrics, I have chosen the subject "Cough," because remarks thereon are as applicable to the age of maturity as to the age of childhood.

A cough is the signal given by the newborn babe that air has entered the lungs, and that they are now ready to perform their part in the battle of life. A cough of some kind or variety accompanies nearly every departure from the normal state of

health; and when in most diseases the power to cough is lost, we know that generally it means the beginning of the end, and that life's fitful fever will soon be over. Among the myriad medical truisms presented to us in this eventide of the nineteenth century, there are none that stand out with more vivid distinctness, than the fact that "cough" is a symptom and not a disease.

With the word "cough" we unconsciously associate the word "expectorant." From time immemorial a cough remedy meant an expectorant. In fact expectorant means "out of the pectus" or out of the breast. But we now know that the cause of some of the most distressing coughs that harass mankind, have no relation to the chest whatever. As this truth impressed itself more and more on the minds of medical men, efforts to fathom the etiology of cough were redoubled, and the results have well repaid their labors.

We understand now a cough is one of nature's methods of giving an alarm that all is not well within. The various nerves governing the mechanism of cough are like sentinels that never sleep. Whenever within their domain, a point of irritation arises, the alarm is given, the lungs distend with air, the glottis closes, and the thoracic and accessory expiratory muscles expel the air like a shot from a gun. Indeed we may liken it to a shot fired by a sentry on guard. If the cause is not removed nature persists in her warnings, and cough will follow cough as long as vitality lasts.

Every cough is a query, a conundrum, and its most fitting symbol would be the interrogation point. A patient with a cough is indeed a sphynx who asks questions that if we are unable to answer mean continued ill health or even destruction. Every cough asks us why, and every hack, wherefore.

If in a perfectly healthy man the cervical pneumogastric be irritated by the passage of a galvanic current, no power in the individual can prevent an effort to cough. This fact that irritation at any point along the pathway of a nerve will produce some result in the part or parts supplied by that nerve, dates back to the days of Galvani.

Misunderstood and often misinterpreted, yet it is the key that has unlocked some of the most perplexing problems of modern medicine. And in no branch of it has the realization of this

fact produced more brilliant results than in the etiology of cough.

The results of irritating a nerve purely motor or sensory in its function is well known and readily understood. But the results of irritating the vagus and sympathetic, the nerves concerned in the mechanism of cough, are so varied in extent, so infinite in variety, that an analysis of them comes near answering the problems of animal life.

When we consider how common is cough as a symptom, of how many human ailments it is an accompaniment, to what serious condition its continuance may lead, it is inconceivable how medical men for so long blundered with the idea that a cough remedy and an expectorant were synonymous.

Before entering on the practice of medicine, I was for several years in the drug business in Washington City. During that time I compounded probably over one hundred thousand prescriptions. In no other way could one learn how common it is with the best physicians to have an empirical formula for all kinds of cough. That statement was more true twenty years ago than it is to-day, but it is still true of more physicians than it should be.

I yet remember the names of prominent physicians whose cough prescriptions, in order to economize time, we prepared in large quantities, and dispensed as ordered. The term "shot gun" prescriptions describes them fairly well, and we may likewise consider them the forerunners of our latter day slot machines. You dropped a dollar or two in the physicians hands, fifty cents in the druggists, and out came your cough remedy always the same. How often in the advertisement of some quack cough remedy have you read, "the favorite prescription of Dr. Blank." There was probably more truth in this part of the advertisement than in any other.

In seeking by induction the etiologic factors of cough we arrive at the general truth, that cough may be caused by an irritation, direct or sympathetic, at any point along the pathway of the nerves governing the mechanism of cough, and that this pathway extends from the brain to the pelvis.

In few places can this fact be better demonstrated than in my own home at Southern Pines. While as yet we cannot compare

in numbers with older resorts, there are represented here types of "cough" patients of almost every variety.

For about two months this spring I had under observation a young lady with a dry hacking cough, and a history of frequent recurring attacks of nasal hydrorhoea. Examination under cocaine detected nothing abnormal. Further inquiry developed a history of extreme uterine retroflexion, for which ventro-fixation had been unsuccessfully performed. Electrical treatments to correct the flexion were at once instituted, and the cough and discharge at once ceased, without any other remedy.

Hysterical coughs are often met with here, and association with tubercular patients gives them often a wide variety of symptoms. Another patient, a lady about 45, was sent South for an intractable cough. It proved to be an interesting case of glosso-labio-laryngeal paralysis. After a two months' stay she has gone home very much improved, not because she came South, but because she received electrical treatments.

I am not prepared to say, however, that the improvement is more than temporary. A case somewhat analogous, a lady about 40, had been under a specialist's care for several months for an aggravated form of cough. Repeated examinations convinced me that there was an aneurysmal tumor pressing on the recurrent laryngeal nerve. She was recommended to consult a surgeon at her home in New York.

While a cough is in some cases a symptom of chronic pharyngitis this latter may itself be but a symptom of some trouble more remote. Continued cough from any cause eventually affects the pharynx, and it may also be secondary to various gastric disorders. In turn the latter may depend on faulty excretory organs. So in some cases the stomach tube is a cough remedy, just as in others a pair of scissors is. And this reminds me that I often meet an uvula clipped, when the cause was elsewhere.

As you see, this paper deals more with generalties than with details. The various etiological factors of cough, are now stated so frequently that repetition here is unnecessary. But I cannot close without strongly emphasizing the importance of local treatment, no matter what may be the origin of the cough.

If while looking at a normal pharynx you require the subject

to cough, you will notice the surface assume a congested aspect, like unto the cheek of a bashful school boy. The longer continued the more suffused with blood does the membrane become. Thus you see that in every disease accompanied by cough if long continued, the pharynx will eventually become involved, and we then have a new cause for cough. Every cough due to pharyngitis can be invariably relieved, and while it may recur, if the pharyngitis is but secondary, still as often as it does recur it can be abated.

These statements and deductions are equally as applicable to the larynx as to the pharynx. It has been to me a source of constant wonderment to see the patients come here with extensive pathological lesions of the larynx and pharnyx for which no local treatment had ever been attempted. There is nothing more pitiable than to see a patient with tubercular laryngitis, to whom even a teaspoonful of water means a paroxysm of pain; and I know of nothing within the province of the physician yielding more satisfaction than the knowledge that euthanasia is possible, and the little of life left them can be spent with comparative ease.

As bearing on this subject let us take the old time remedy, cod liver oil, either in its pure state or its various emulsions with egg, gum, malt, petroleum or Irish moss. It has undoubtedly cured many coughs. How did it act?

It is not possible in any disease with any remedy to strike an exact balance, because the *vis medicatrix naturæ* cannot be measured. But as far as we can trace it when a dose of oil is taken, what is its mode of action? In its passage downwards it reaches the buccal cavity, the pharynx, epiglottis œsophagus and stomach. During this passage how has it helped the lungs for instance? It has not touched them.

It is true these oil globules may finally reach the circulation, and feed worn out nerves. That is very essential, but that is a property of food and not of medicine. In what other way does it help? Generally speaking I have but little use for cod liver or any other oil, but in some cases it is beneficial; in what way does it act? It helps the lungs when it gives them rest, and it gives them rest when it lubricates an irritated pharynx, and thus removes a frequent cause of cough in tubercular disease. But

lubrication equally as efficacious may be gotten by the application of petroleum oils and other remedies, and this too without the danger of stomach derangements that so often follow the administration of oils.

This explanation takes no account of the iodine and bromine contained in the oil. That they have value in some cases I admit; in fact some claim the whole value of oil is due to them. I have tried these remedies in their most potent forms, i. e., hypodermically, and must say I think their value limited. But to come back to our question, how many physicians give the oil for its mineral constituents, and how many have a definite idea of just what they think it will do?

This question of rest for the lungs is a most important point in considering the treatment of cough. A person cannot cough without bringing into action the lungs and the muscles associated with the lungs. It is just as essential, in order to heal diseased lungs, to give them rest from abnormal action as it is to give rest to a fractured limb. Anything that will prevent cough conduces to this end, and soothing the irritation of the upper air passages is a most potent method of doing this very thing.

That people are sometimes cured of coughs by the use of patent medicines is undeniable. It is hardly likely that millions of bottles would be sold did they not possess some curative properties. I am convinced this power to cure is largely due to the opiates they contain. The most widely advertised cough syrup of our generation contains but acetate of morphia and simple syrup. To give morphia for a cough as a routine treatment is most unscientific and inexcusable. But even so it will in the long run yield better results than the routine treatment by a medley of expectorants. The idea that to stop a cough is injurious is more or less prevalent. What is there must come up, we are told. Now it is true that in lung trouble the results of necrosis must be removed. But it is not true that in order to do this the patient must cough and hack the greater part of each day and night. It is necessary each day that the contents of the bowels and bladder be evacuated, but continuous movements are not necessary to accomplish these objects. Throughout these remarks I have reference particularly to unnecessary coughs, and excepting advanced bronchial and pulmonary disease, it is surprising how little cough is necessary.

If a naturalist were presented with a bird to him unknown, it would require long study to properly classify it. The next time he would class it more quickly, and with extended experience he would not need to examine the whole bird; a wing, a head, or a tail would suffice.

Just so it seems with many cases we meet in our little town of Southern Pines. Examination seems so unnecessary; their symptoms are so pathognomonic. But over and over again careful examinations have disclosed complications not before thought of. Routine in treatment is bad, but routine in examination is good.

Remembering how frequently the upper air passages are a cause of cough an examination should begin with the nostrils and extend to the trachea. Then would come the chest, the ear, and stomach. Next in order we seek for swollen glands or tumors, or enlarged organs, along the pathway of the nerves; next we look for constitutional causes, such as the heart, liver and kidneys. Nor must it be forgotten that in the orifices of the body may often be found the solution of our problem.

As to the treatment of cough in infants and children, but little need be said regarding medication. Until a babe is educated (?) he knows no better than to breathe through the nostrils. The slightest cold in infants will occlude the nasal passages and then begins incessant cough and a struggle for breath. With a camel's hair pencil or a pledget of cotton on a toothpick, appropriate medication may be safely carried to the upper pharynx. Even the old familiar goose grease will yield marvelous results.

In all colds in children, remember first of all to keep the nasal passages clear. Better than a knowledge of expectorants is familiarity with the use of heat and cold. Both are potent remedies and are worthy of careful study. As to medication after thoroughly cleansing the intestinal tract, aconite with me holds first place in acute disorders. Someone has said the public estimates a physician's worth by the number of cures he makes; but physicians gauge the merit of each other by the accuracy of their diagnoses.

Generally speaking a physician need not be told the proper line of treatment when a correct diagnosis is made. A good

diagnostician is generally a good physician, because he works with the rifle and not with the shot gun. He shoots in the broad daylight of knowledge and not in the twilight of guesswork.

A physician's position in this great human machine called society is a most responsible one. He is veritably a priest of a flock. Upon him devolves the health and happiness of the human beings entrusted to his care. It is his duty backed by his Hippocratic oath, to bring to his daily task the fruition of modern therapy as far as may be in his power. But in his search after knowledge let him not forget that the microscope does not always show the cause of human suffering. Treat the patient and not the disease, nor be deterred by the absence of high-priced clinical apparatus. Men have died and worms have eaten them who yielded up their blood to the microscope, and had their phogocytes and leucocytes numbered and assorted.

Remember that a sincere sympathetic interest is often more precious than a knowledge of bacilli. The truth, the whole truth should be our motto and our aim. More than that we cannot compass; with nothing less should we be satisfied.

Inanition Fever of Infancy.

By R. C. ELLIS, Shelby, N. C.

Ancient Mythology teaches us that Prometheus, the son of Japetus, was the first to make men out of clay and to bring fire from heaven in a reed, and showed them how to keep it wrapped in ashes. For this offense Vulcan, by the order of Jupiter, fastened him with iron nails to a rock, an eagle being placed near him which knawed at his heart. In subsequent time Hercules pierced the eagle with arrows, and thus liberated Prometheus.

The application of this fable to my subject is, that the fire from heaven represents that spark of life which exhibits itself in the new-born infant. Keeping it wrapped in ashes is the effort we may put forth to retain its vitality. Fastened by nails to a rock indicates the complete helplessness of the little one. The eagle knawing at his heart, hunger—that distressing craving and unfulfilled demand of nature, dreaded by man and beast, and

evoking the sympathy of the civilized world. Ample provisions are made all over our land for the imbecile, the pauper, the maniac, in the way of homes and asylums of different kinds, that none of their inmates may feel the pangs of hunger. Will not mercy and medical science raise their hands in horror at the sight of a little sinless being, fallen a victim to that dread monster, starvation, with no one to rescue and no one to save? A weeping mother, still feeble from the shock and agonies of parturition, sees, perhaps, her first-born withering away hour by hour like a tender plant beneath the rays of a tropical sun, and she looks for no other source for aid than the family physician; and should he not bestir himself, and awake his powers with the energy of a Hercules, and give this subject his most profound thought, study and attention?

By the term Inanition Fever, it is my purpose to express as well as emphasize a very close connection which exists between the rise of temperature and the condition of inanition or starvation, in the new born.

In the above heading are included cases seen during the first five days of life—usually from the second to the fourth day—in which there is an elevation of temperature seemingly due to the fact that the infant obtains very little, ofttimes nothing from the breast at which it is nursed. Another characteristic of these cases is a sudden decline in the temperature when milk is secreted in abundance, the infant put upon a full breast, artificial feeding is begun, or even water is given freely. A failure to observe these precautions at the proper time has doubtless contributed much to increase the table of infant mortality; hence my reason for selecting this seemingly trivial but important subject.

It is to be greatly regretted that so little literature has been published by writers on pediatric medicines concerning the subject of this paper, but future authors will no doubt continue their investigations and thus give the world such information as its importance demands. From a careful study of the literature it seems that Dr. McLean, of New York, (1890) was the first to call the attention of the profession to this condition, he having reported to one of the medical societies an extraordinary hyperpyrexia in the newly born child. The infant was found on the

sixth day with a temperature of 106°F., near which point it remained for three days. The breast from which it nursed being absolutely dry, a wet nurse was procured. The temperature fell to normal in a few hours, and the child, which, when first seen, was apparently in a hopeless condition, was soon perfectly well.

Holt relates the following typical case of the more severe form: The patient was the second child, the first having died at the age of ten days, from no disease, it is said, but simply from exhaustion. At birth, the infant, a boy, weighed 8¼ lbs., and was apparently vigorous. During the first forty-eight hours his loss in weight was 5¼ ounces, and his condition good. Was seen on the evening of the third day. In the preceding twenty-four hours he had lost 8 ounces in weight, and the temperature had gradually risen until at the time of my visit it was 101½°F. The body was limp, the child making no resistance to examination. He cried with a feeble whine, the restlessness of the early part of the day having given place to complete apathy. The lips and skin were very dry, the fontanel sunken, the pulse weak. As the father, a physician, expressed it, "he had been wilting through the day like a flower in the sun." Although put to the breast regularly, the child had gotten very little. It was, in fact, impossible to squeeze milk from the mother's breast. Water was given freely and a wet nurse secured in a few hours. The first milk was taken from the wet nurse at 11 p. m., and the temperature, which fell gradually during the night, was normal the next morning, and did not rise again. During the succeeding four days the child gained eighteen ounces in weight, and at the end of a week was as well as an average infant of his age. The uniformity of symptoms and characteristic features of these cases of fever entitle them to a class of themselves. Pyogenic infection, which rarely begins before the sixth day, can hardly be confounded with this fever.

In the treatment of these cases, water should be given regularly in quantities from a half to one ounce every two hours, if required by the thirst of the child. This should be done in every case where the temperature reaches 101° F. When the temperature does not begin to fall at once, the infant should be placed upon another breast, or artificial feeding promptly resorted to. The breast from which the child has been nursing will, on

examination, usually reveal the fact that the secretion of milk is very scanty and often entirely absent.

In conclusion I will say that, very much to my regret, owing to the hurried preparation of this paper, while I, perhaps, have not edified those to whom it has been read, I shall feel deeply grateful for the task if I have succeeded in calling the attention to, and eliciting the interest of, so learned a body of physicians as compose the North Carolina Medical Society, in a subject, the management of which, to some extent, affects the population of our great commonwealth.

SURGERY.

The Ambulatory Treatment of Fractures Involving the Bones of the Leg.

By A. S. PENDLETON, Warrenton, N. C.

THE title of this paper may lead you to suppose that the treatment to be discussed is a radical departure from the old established lines, but before we have proceeded far you will have discovered an old friend, upon whom Time has wrought some changes.

All honor and credit for the innovation should be given Dr. C. W. Galvin, of Boston, who, so far as I am aware, was the first in this country to either use or advocate the plan that I shall now try to give you in detail.

The treatment differs from that usually adopted in that a plaster cast is applied immediately after the injury has been received, or as soon thereafter as is practicable; passive motion is used earlier; and the patient is allowed to walk on crutches from the beginning, and to bear a part of his weight on the injured leg so soon as union has begun.

Let us take a Pott's Fracture, the one for which the treatment is most peculiarly fitted, and follow its course from the receipt of injury to the discharge of patient, as in this way the differences may be more readily shown.

For the relief of pain the injured leg is immersed in a hot creolin bath (ʒss. to O) and allowed to remain from one-half hour to one hour. The fracture is then reduced and a plaster cast is applied, over cotton batting, from the ball of the foot to the tuberosities of the tibia, the heel being covered or not as is preferred by the surgeon. The patient is allowed to walk on crutches, the foot of the injured leg touching the ground, but is instructed to bear none of his weight.

At the end of a week the cast is removed, passive motion used, and the cast reapplied. This procedure is repeated every third day during treatment. On the 12th to 14th day union will

usually have begun, and then the patient is told to bear a part of his weight on the leg but to "favor" it. On the 21st day, if union seems to be firm, and this is almost invariably the case, the cast is replaced by careful strapping with adhesive plaster, permission to discard crutches and use a cane instead is given, and the patient told to report in one week when the adhesive plaster is removed, a bandage applied to prevent swelling, and the patient discharged ready to begin work.

When the fracture is of the tibia or of both bones, the cast is retained about a week longer and none of the weight of the body is borne by the leg till the 18th to 21st day—so lengthening the treatment about a week. Otherwise there is no change.

Where the fracture is compound, if union by first intention is secured, the foregoing method may then be applied as to any simple fracture.

If the fracture is multiple or comminuted, the ambulatory treatment may be employed; but, of course, a longer time will be required to effect a cure.

A tendency to the formation of blood blisters over bony prominences, which is sometimes seen, contra indicates the use of this plan of treatment.

Let us now consider the advantages of this modus operandi: The immediate application of cast to a certain extent prevents swelling about the seat of injury, which, when excessive, retards union; and diminishes muscular spasm which is so often a source of great pain after fracture. The early use of passive motion, and of the leg, reduces to the minimum the stiffness resulting from treatment.

That wearying lying in bed so distasteful to all and even endangering the lives of a few, and which so quickly saps the strength and injures the health, is avoided.

The swelling of the leg usually following the regular treatment is most often conspicuous by its absence, and when present is of slight degree and readily relieved by bandaging. When the patient is discharged, not only has a cure of his fracture been effected, but his general health and strength have been retained and he is ready to begin work again.

Allow me to add that the latter is of no small importance, more especially when the patient belongs to the laboring class.

Now what are the disadvantages of this method? You will say at once: the probability of deformity, of delayed union, or of having to deal with an ununited fracture.

In answer let me say, that the stimulation caused by the slight motion of fragments seems to hasten rather than delay union; that, though I have before me while writing, reports of 97 cases so treated, in not one of them was an ununited fracture the result; and that, from the results obtained by others who have used this method, and from my own experience with it, I have no hesitancy in declaring that there is no greater tendency to deformity than with any other treatment.

Allow me to present a condensed report of a few cases to further support the position I have taken.

Case I.—R. H., Irish, Age 34, Male, Miner.

Lump of coal fell on left leg. Typical Pott's fracture. Creolin bath ½ hour. Fracture reduced and cast applied. Allowed to bear weight on leg at end of second week.

Cast removed 22nd day and leg strapped. Crutches discarded.

29th day—Adhesive plaster removed and leg bandaged. Patient allowed to return to work but told to report one week later.

36th day—No trouble experienced from use of leg. No deformity other than slight nodules at seats of fracture.

Case II.—G. R., Teamster. Age 41.—Leg run over by wagon. Transverse fracture of Tibia about the middle of shaft. Oblique of Fibula at junction of lower and middle thirds. Creolin bath one hour. Plaster cast after reduction.

21st day—Allowed to bear weight on leg—union apparently firm.

40th day—Adhesive removed, leg bandaged and patient told to return to work and report one week later.

47th day—No trouble from use of leg. No shortening and no deformity save that produced by callus at seats of fracture.

Case III.—H. S., Italian, Miner. Age 37. Bank of coal fell on right leg. Compound fracture of right Tibia. Very dirty—Oblique of Fibula lower third. Thoroughly cleansed under ether. Ends of Tibia freshened and sutured with Kangaroo tendon. External wound closed with silk worm gut. Leg put in fracture box and application of cold through coil for 36 hours.

10th day—Union of soft parts by first intention. Cast applied

with window at seat of external wound. Patient allowed to walk with crutches.

30th day—Union apparently firm, but patient not allowed to bear weight on the leg until 33rd day.

40th day—Cast retained but patient allowed to walk with cane.

45th day—Cast replaced by adhesive plaster.

50th day—Adhesive plaster removed and leg bandaged.

Patient told to go to work if he wanted to. Union firm. In this case there was one-half inch shortening, otherwise the result good.

I shall be glad if anyone, who is familiar with this plan of treatment, will give us the benefit of his experience.

In conclusion let me say that if the thinking members of our society who have had experience with the use of plaster casts, will consider this method and give it a trial, with any changes that their good judgment and the exigencies of the case may suggest, the object of this paper will have been accomplished.

DISCUSSION.

Dr. L. J. Picot: I must thank Dr. Pendleton for his most excellent paper, and place myself on record in substantiation by saying as long ago as 1878, soon after the introduction of plaster paris, I began this treatment. I never have used creolin dressings, but I always did my very best to put on a spiral and reverse bandage so smoothly and evenly that it would prevent muscular contractions. Bandaging now is almost a lost art, I am sorry to say. I will only report one case. This was the most useful of all our domestic animals, a horse. A young man came to me one morning with tears in his eyes and in his voice, begging that I would go and see his favorite horse that had its leg broken. I found the leg broken about half way between the knee and ankle joint. I had two men to grasp around the hoof and hold his leg while I adjusted the fragments of bone, and after the spiral and reverse bandage I put on a solid plaster cast and turned the horse loose in a green wheat field. After five or six days he jumped a five rail fence and after three months he was cultivating the crops. Dr. O'Hagan was there shortly afterwards and I brought up the horse for exhibition and he commended me and the young man and the horse.

PRESIDENT LONG: Dr. O'Hagan is a man of fine taste.

DR. C. J. O'HAGAN: I have always been in the habit of treating fractures by the old method, but the method suggested by Dr. Pendleton commends itself to me first of all, for its simplicity, and allowing the patient to move about in the open air. The fact of that tends to hasten convalescence, and according to his experience it has certainly been attended by remarkable results. My friend, Dr. Picot, called my attention to the horse case, and I looked upon it at the time as a triumph of surgery, from the fact that horses with broken legs are usually destroyed, owing to the impossibility of securing fixation. Living in a small country village it does not often happen to me to see many fractures. In all probability I will have but little opportunity of testing the value of that treatment during the remainder of my life, but the method certainly commends itself to me as an improvement on the old method, and if it falls to my lot to have a case of fracture I shall certainly try it and report it at the next meeting of the Society. I would be glad to hear from some of the younger gentlemen present, who will probably have much greater opportunity than I for testing it, and it will be well enough for them to contribute their experience hereafter.

DR. LAUGHINGHOUSE: I would like to ask Dr. Pendleton why creolin is used.

DR. PENDLETON: It has been my experience that it relieves the pain better than anything else that can be used in that way. That covers a hospital experience where I had an opportunity of seeing a good many fractures. I would like to say also, Mr. President, that the cases reported were average cases so far as the duration of the treatment was concerned. I have treated one case in which the patient never used a crutch, only used a cane to walk to and from his place of business. He was a cutter in his tailoring establishment, and must needs stand on his feet 8 hours a day, and in his case the result was what is usually considered as good in the treatment of Pott's fracture. That is, there was an enlargement at the seat of fracture of the fibula, and this, by the way, was a typical Pott's fracture, in which the tip of the internal malleolus was chipped off and there was some slight dislocation of the fragment. There was no perceptible stiffening six weeks later. Of course we could not expect

to do that in private practice. The responsibility was shifted on the patient here. I told him at the time if he was willing to make the experiment I was. I would say in a large number, perhaps 25, possibly 35 cases in which only the fibula was involved, and perhaps in the lower one-fifth of the shaft, I used a plaster cast for two weeks, followed by strapping, practically replacing the plaster paris bandage by rubber, the fixation being practically as great as the plaster; more resistance, more elastic, lighter and more comfortable, and in my opinion should be used as quickly as possible in the treatment of any fracture. My rule always was at the end of the third week to replace the plaster cast with adhesive plaster where the fibula only was involved, unless there were considerable laceration of the ligaments of the ankle-joint.

Dr. H. T. Bass: If I understand the doctor he puts the fracture in his creolin bath one-half to an hour before he sets the fracture. I would like to ask the advantage in regard to that.

Dr. Pendleton: The action of the creolin in hot water has a tendency to relax the muscles and makes the reduction much less painful for the patient.

Hemorrhoids.

By H. T. BASS, Tarboro, N. C.

Hemorrhoids, or piles, is the most ancient disease we have any record of, and, in the range of surgical pathology, no other class of diseases is so prevalent among the civilized communities, causes more suffering, and produces so many reflex symptoms as Hemorrhoids, or, rather, diseases of the rectum, including the anus. This is due to their anatomical structure, physiological function in the great economy of nature, and their relation to important organs in close position to them.

The first record we have of the disease is recorded by Moses when he threatens his people for disobedience, Deut., ch. 28, v. 27, which reads thus: "The Lord will smite thee with the botch of Egypt, and with the emerods," etc. The Greeks many centuries afterwards called the disease hemorrhoids. In I. Sam., ch. 5, v. 9, we find, "and he smote the men of the city, both small

and great, and they had emerods in their secret parts." In Psalm 78, v. 66, we read, "And he smote his enemies in the hinder parts," and to this day, in ancient or modern times, the punishment has not been improved upon, so far as unfitting one for active exercise and general usefulness. And there is no disease that one, either from mistaken modesty or procrastination, will hold on to longer, hoping that nature or some home remedy or patent medicine will cure. I have known several, whose business, health, home and temper were ruined because they would not be cured of their hemorrhoids, fearing the knife and anaesthetic.

The term "Hemorrhoid," which means a "flow of blood," is not just the correct term, and was coined by the Greeks to mean "an active flow of blood, a flux, a hemorrhage, coming from the rectal veins. Garland interpreted the term to mean a passive hemorrhage. At the present time most authors make the term mean tumors resulting from the enlargement of the veins of the rectum, whether they bleed or not, and most patients speak of them as "piles." They are both misleading, and yet, they are terms which have been in use so long that it is not well to change. The average patient calls everything that bothers him about the rectum piles, and that is why we inspect and examine with eye and finger every case that comes to us; the patient generally thinks what will cure one will cure all. They do not take into consideration the cause and effect. I do not propose to recite the anatomy of the rectum, but will call attention to its gross construction.

The rectum is composed of mucous, muscular, and peritoneal coats, with their connective tissue, and is supplied with blood through three arteries—the superior, middle, and inferior hemorrhoidal, coming off from their respective larger and more important arteries supplying their respective parts of the rectum, and discharge their blood through veins of the same names, made up from the same general distribution, the middle and inferior coming from the anal region, and emptying into the internal iliac. The superior is made up from the hemorrhoidal plexus in the lower part of the rectum proper, running under the mucous membrane for three or four inches, then through the muscular coat to the outer side of the gut into the portal system.

It derives its nervous supply from both the cebrospinal, the system of animal life, and the sympathetic system, the system of organic life. The former are from the sacral plexus, and the latter from the mesenteric and hypogastric plexi. I will not, in a paper of this kind, go further into the distribution of the various branches of these nerves, but we can well understand how hemorrhoids will give the varied symptoms we so often see in our patients, from a pain in the head down the spine, to a pain in the heel. The middle and upper part of the rectum are much less sensitive than the lower, as has been shown by Bodenhamer, and illustrated by every one who has treated hemorrhoids by injecting them. The pain increases the nearer the anus is approached; hence, one may have quite extensive hemorrhoidal trouble high up in the rectum beyond the anus, and have very little pain, while very small hemorrhoids in the anal region will produce excruciating pain and varied reflex symptoms.

The muscles of the rectum or anus are two, the external and internal sphincters, which I only name without describing. They play an important part in the treatment of hemorrhoids on account of their position, and the power we have to use, to dilate and contract them.

The symptoms of hemorrhoids vary from a slight discomfort to an intense pain. In getting the history from the patient we should learn if the pain or discomfort, is dull or sharp in character, if low down in the anus, or high up in the rectum; and many other questions may be asked as they suggest themselves, or we might confound the trouble with fissures, ulcers and morbid growths of the parts, which will be cleared up by inspection and examination with the finger in the rectum. Patients, as a rule call every trouble about the rectum, piles. I have had them to come with warts, eczema, fissures, ulcers, cancer, and various other troubles, yet, they will say they have piles; therefore, we don't take their word, but make an examination with eye and finger.

Hemorrhoids are divided into two classes, external and internal. This classification is based on pathological facts, and their anatomical relation to the anus, or sphincter muscles. External hemorrhoids are those external to the sphincter muscles and anus, and are covered, or partly so, with skin, while internal

hemorrhoids are covered entirely with mucous membrane. It often happens, owing to their size, that internal hemorrhoids will protrude in the act of defecation, or when the sphincters are much relaxed, but they are internal hemorrhoids proper, for they are covered with mucous membrane, and they can be replaced and will remain within the rectum for a time, if the patient is quiet. External hemorrhoids cannot be introduced into the rectum; they are covered with skin, and, furthermore, one is the result of a ruptured vein, and the formation of a clot or thrombus and has a purple tint and irregular surface, while the internal hemorrhoids are the result of dilated veins or capillaries, have a smooth, shining surface, and are red in color.

The cause of hemorrhoids are numerous. I will not mention all of them enumerated in the books on the subject, but no doubt the anatomy, the erect position, the occupation and habits of man, are the principal causes, because they are confined to no class; the rich and the poor, the high and the low, the humble and the arrogant, are all afflicted alike. Man is the only animal that is afflicted with hemorrhoids.

External hemorrhoids are divided into two classes, thrombic and cutaneous; really, they are one, as the cutaneous results from repeated attacks of the thrombic.

The internal are divided into two classes also, the capillary and the venous, with more show of reason for the classification. The capillary tumors are smaller than the venous, spongy in texture, are formed by the superficial vessels of the mucous membrane, and somewhat resemble strawberries. They may be alone or present with the venous variety. They rarely protrude and scarcely ever give pain, but always bleed. The venous variety are found more frequently than the capillary; they are larger and vary in size from one-half an inch to an inch or more across their base, are covered with mucous membrane, have a glistening appearance, are of a bluish, or livid color, and are formed by the veins in the sub-mucous tissue.

The earliest recorded requirement for the relief of hemorrhoids was a "gold cure" and is found in Samuel, chap. 6, v. 4. When the Philistines asked what they were to do to cure their affliction, they were told, "return the ark and a tresspass offering, five golden emerods, and five golden mice," etc., and to this day

patients are willing to pay liberally of their gold for relief.

In the treatment of hemorrhoids we must take into consideration the kind we are to treat, the condition of the patient, and the cause, or we do not get the best results. There is no mode of treatment adapted to every case that presents itself. There are various modes of treatment and each mode has its advocates; but he who adopts one mode for the treatment of all cases makes a mistake. The treatment of hemorrhoids should be both palliative and operative; the latter should always be done unless the patient refuses. In treating external hemorrhoids we use anything to palliate the pain and subdue the inflammation, such as rest in bed, with hot or cold to the parts, as is most agreeable to the patient. Any of the following are good: sage tea, lead water and laudanum followed by some bland antiseptic ointment such as, Rx. Ext. Belladona 10 to 20 grs, Menthol 10 to 20 grs., Petrolat. 1 oz., or Rx. Hyd. Chlo. Mit. ldr., Petrolat. 1 oz. Rx. Aristol. ½ dr. Petrolat. 1 oz. Rx. Acetanilid ʒi. Petrolat. 1 oz. If the secretions of the liver and glands are bad we should give calomel followed by Mag. Sulph. or some alkaline cathartic as the patient or physician may select. If the patient will submit to the operation, we open the thrombic hemorrhoid and let out the clots, after bathing the parts with soap and water and sponging it with 1 to 4000 bichloride, or some antiseptic wash selected by the physician, and touch the cut surface with some astringent; then place a small piece of antiseptic gauze in the cut to prevent primary union and refilling of the vein; place over that a pad of cotton and gauze held in place by a T— bandage.

The treatment of the cutaneous differs only in excision and incision. The treatment of internal hemorrhoids is conducted very much as that laid down for treatment of external hemorrhoids, so far as the palliative treatment goes. We reduce the inflammation as fast as we can by the application of hot or cold packs or poultices, as may be most grateful to the patient. We allay the pain by the application of anodine lotions and ointments. I find the following very useful in many cases; it is both an anodine and disinfectant. "Menthol ldr., Acid Carbol. 1 dr. Simple cerate 2 oz., Ol. Sweet Almonds 1 oz., Pul. Zinc Ox. 2 drs. I apply this morning, noon and night with a hemorrhoid pipe, and oftener if the bowels should move, and where the

hemorrhoids are small with general congestion, I use the following: "Rx. F. E. Hamamelis 2 oz., F. E. Ergot 2½ drs., F. E. Hydrastis 2½ 3i., Tinct. Benzo. Comp. 2½ 3i., Ol. Carbol. 5 per cent. qs., 4 oz. Inject a teaspoonful in the rectum with a small syringe night and morning. Instruct the patient to be quiet for a short time.

There are eleven to fourteen modes of treatment laid down by some books for the radical cure of internal hemorrhoids. Among them are the ligature, clamp and cautery, excision, and the injection process. All modes of operating have their advocates and they are all good and proper for the proper case. The ligature had its advocates in Hippocrates and Celsus, and Rhazis, the great Arabian physician of the tenth century; also Mr. Allingham, of London, and Prof. Matthews, of St. Louis, of the present day. The clamp and cautery had its advocates in Mr. Cusack, of Dublin, and Mr. Henry Lee, of London, and later in Mr. Henry Smith, of London, and Prof. Kelsey, of New York City, and many others. The excision has its advocate in Mr. Whitehead, of Manchester, England, who seems to be its only enthusiastic advocate as a routine practice. The injection is not popular, and it lacks the display of some of the other methods, but it has its advocates in Dr. Andrews, of Chicago, and Dr. Agnew, of San Francisco, who were instrumental in taking it out of the hands of quacks. Agnew says in his work on the treatment of hemorrhoids, "There are no tenable objections rationally and scientifically applied which cannot be equally urged against the more heroic plans of treatment advocated and generally adopted. But there are many serious and unavoidable drawbacks inherent in the latter methods of cure which are wholly and incontrovertibly absent in the former method." Kelsey, after using it as a routine practice for a year, and treating some two hundred cases, spoke very highly of the treatment. Yet, in his recent book, he speaks of the bad sequels following the treatment. He says: "While for a year I used the method almost exclusively, I now use it in only selected cases." Mathews said, in the last meeting of the Mississippi Medical Association, that no intelligent physician would use the method. Prof. J. P. Tuttle, of New York City, some five or six years ago, had one of the best papers on the subject in the New York

Medical Journal that I had seen, commending the treatment in proper cases, and in a letter to me a few weeks ago, he says, "I am of the same opinion still" and "that in properly selected cases and aseptically and carefully done, it is a very useful method, and a slough should not be produced, and no accident ought to occur." Prof. S. G. Gant, in his book on Diseases of the Rectum and Anus, gives the best description of the treatment I have ever seen, and the kind of cases to treat, and, in the proper cases, recommends it, and gives formulæ that he used, all containing carbolic acid. He lays down some rules to go by which one will do well to follow. "Don't inject a hemorrhoid when inflamed, when ulcerated, when external, when within the grasp of the sphincters, and when large and hypertrophied," and when the liver is diseased from whiskey or any cause, for that causes those unexpected bad results. Kelsey and Mathews recommend that the patient strain them down, and then the doctor catch them with a tenaculum and pull them out and inject the acid; then put them back. That is a big mistake; you can never replace them properly after they are once injected. I never inject a hemorrhoid on the outside, nor when I cannot get it above the sphincters. This was the cause of Drs. Kelsey's and Matthews' bad results.

I use either 12½ per cent. or 33⅓ per cent. of carbolic acid in equal parts of water and glycerine, injecting eight or ten drops of the former, and four to six drops of the stronger, injecting one hemorrhoid at the time, with a hypodermic syringe with a long needle, through a cylindrical speculum with a piston and slide. You introduce the speculum with the piston in position, above the sphincters, remove the piston, and then withdraw the slide gradually until the hemorrhoid drops down in the slot; you will recognize it by the color, and then you inject the solution drop by drop until you slightly turn the color of the hemorrhoid a little pale. The treatment is entitled to a position in surgery, and ought not to be relegated back to the quack, as such expressions as those used by Mathews is calculated to do.

I have treated fifty-three cases during the last fifteen years, and have averaged six injections to the case, and I have had only three hemorrhages and not a single abscess. Seventy-five per cent. were cured and all relieved. The average length of time under treatment is about three weeks.

Mr. P. called on me for treatment for hemorrhoids; he said he would not take anaesthetic, nor would he be cut or tied, as he expressed it. He said he could not walk a square without his hemorrhoids coming down. Upon examination I found a large sub-mucous hemmorrhoid protruding, and the sphincters very much relaxed. I replaced the hemorrhoid above the sphincters, injected six drops of a 33⅓ per cent. solution, and requested him to be quiet until next morning, which he did, and the hemorrhoid never protruded again. I treated that hemorrhoid three times at three days' intervals, and the patient was under observation for five years and did not have a return.

Mr. J. came to me for treatment; said he had heard that I could treat hemerrhoids without cutting or tying them, and at the same time let him be about his business. I examined him; found two hemorrhoids protruding. I introduced them into the rectum, but could not place them above the spincters completely as they were situated partly within the spincters, but as he would not submit to any other treatment, and I was anxious to treat him, I injected both of the hemorrhoids at once. Soon his bowels had to move, and the hemorrhoids protruded and could not be placed back owing to the swelling—they were strangulated. The patient was in bed for a week before the inflammation subsided. Some weeks afterwards I treated that patient again, and three days afterwards he had a hemorrhage, and afterwards he would not allow me to treat him again. He suffered pain after each injection. This patient drank whiskey and had a bad liver and full capillaries.

Mr. B., a farmer, aged 55, came for treatment. I found internal sub-mucous venous hemorrhoids of long standing. He said he could not keep his hemorrhoids up and that he had to replace at the end of each row. I found a hemorrhoid protruding which I could replace beyond the muscles. I injected it and sent him home, six miles in the country. He returned within three days, said his hemorrhoid had not been out since he left; that he had kept his bowels open with warm sage tea. I found the hemorrhoid much reduced, and treated it again. He returned within a week, and I found the hemorrhoid reduced to a rudiment of a hemorrhoid with no inflammation in it. He did not stop his farm work during the treatment and said he had no pain to bother him.

I was called to see Mr. G. I found him suffering with internal capillary hemorrhoids that bled freely when the bowels moved. He said he had suffered for a long time, and had lost so much blood that he could not be about. I found one of the hemorrhoids ulcerated, and it must have bled freely when the bowels moved, as he said, and judging from the appearance of the man. I injected that one, and put him to bed for twelve hours; had him to move his bowels with an enema of sage tea. His hemorrhoid did not protrude nor did he have any hemorrhage. He had very little pain from the treatment. He was under treatment for two months before he was cured of all his hemorrhoids. He says that I have added ten years to his life. I have had these cases under observation for ten years.

I cite these cases because I think they illustrate the kind of cases that can be injected, and those that should not be injected.

If we are to get the best results we should treat the general proctitis that accompany all hemorrhoids. It takes a longer time to cure with this treatment in many cases than it does with the clamp and cautery or ligature, but the patient can be up and about his business at the time he is being treated, and that is quite a consideration with many. Often, after the patient gets comfortable, he quits the treatment before he is well, and is often troubled with hemorrhoids again as a result. I try to obligate them to continue until I discharge them. We can secure many cases by injection that will not submit to any other treatment.

I have operated with the clamp and cautery and ligature often, and those cases have not been more satisfactory than those treated with the injection method.

DISCUSSION.

Dr. Leigh: *Mr. President and Gentlemen of the Society:* I thank you very much for this warm reception. I bring you fraternal greetings from the Medical Society of Virginia. I express the earnest wish that we may see many of you at our next meeting in the shadow of the University of Virginia. I hardly know what to talk to you about. I did not expect to be called upon or I might have had something prepared. I may say a word or two in connection with the subject of Dr. Bass' paper on hemorrhoids. I know of no department of surgery in which we can

get more brilliant and permanent results than the department of rectal surgery, and especially in the treatment of hemorrhoids. I mean the thorough treatment which is the operative treatment. I do not think that enough stress is laid on the preparatory treatment and after-treatment of these cases. Those of us who do hospital work come across too often cases of this kind which have been operated on and in which recurrences have taken place. I do not think a recurrence should ever take place after an operation for hemorrhoids, if the patient is properly prepared, is properly operated on, and has the proper instructions after the operation. In preparing a case for rectal surgery, and I will state that I see no reason why rectal surgery should not be done outside hospitals, but the patient must be looked out for thoroughly. Because you have not the surrounding of a hospital it seems to me that this is no excuse for doing incomplete work. Unless the case is one of emergency it should be done well. I believe the secret of failure of rectal cases lies largely in the lack of preparation of the patient. The alimentary canal must be emptied completely, so that the bowels will have no tendency to move 3 or 4 days afterwards. The patient in this respect should be prepared a few days before the operation and the evening before the operation should have no solid food for supper. That night patient should be given a mild cathartic such as licorice powder. Next morning a high enema, using a tube that would enter the sigmoid flexure. After an hour or two use a lower one. If the water is colored at all the lower enema should be repeated until the water is clean. In regard to choice of operation, as Dr. Bass said, you cannot lay down any rule. Indeed, I do not think a surgeon can decide upon the kind of operation for hemorrhoids until the patient is thoroughly anæsthetized, and the sphincter throughly stretched. After stretching the sphincter we find out how much there is of the piles. If the piles can be compressed and the blood driven out, then the cautery or clamp and cautery is indicated. This clamp and cautery operation is used very extensively in surgery. If the disease has gone on so far as to form new connective tissue it is necessary to cut away that tissue. This can be done by the ligature method or the Whitehead method. The Whitehead is a very efficient operation but should never be done outside a hospital. It is

really an excision of the lower end of the intestine. The results are beautiful if properly performed and the patient properly nursed afterwards. There are some risks, however, of the mucous membrane breaking loose. The ligature operation is a very satisfactory one. In regard to the after treatment, the patient should be kept on liquid diet until the bowels are moved. As a rule, no opiate is required. If there is a desire for a movement deodorized tincture of opium or some form of opium may be given to check the movement of the bowels. In my practice I use a tampon canula which consists of a piece of rubber tubing around which is wrapped three or four layers of iodoform gauze, with vaseline rubbed into it. This is inserted to the bowels for two purposes: to bring an aseptic surface against the raw surface of the gut; the other is to permit the passage of gases from the intestines. On the day the bowels are to be moved we give a saline cathartic in the morning. When the patient has desire for movement we inject through the tampon say 4 to 6 ounces of warm sweet oil followed by soapsud enema given with fountain syringe. The bowels are moved without pain and the patient is put in a sitz bath. The bowels must then be moved daily with a mild cathartic, given in sufficient amount to cause one soft action. After the action a sitz bath. After the patient is well enough to leave the hospital he should continue to take sufficient cathartic to cause one soft action a day for months afterwards. I believe this point if strictly adhered to will prevent many recurrences.

Surgical Treatment of Gall Stones, Report of a Case, Removal of Sixteen Stones and Exhibition of Specimens.

By J. B. SMITH, Pilot Mountain, N. C.

The presence of biliary concretions in the gall-bladder in view of the importance of the surgical aspect of the subject deserves a brief consideration of the composition of such concretions and of the fluid from which they crystallize.

The anatomical relations of the gall-bladder and ducts being considered, but it is important to observe that the desquamation

of the epithelial cells and abundant mucous secretion of the glands with which the gall-bladder is liberally provided play an important part in the development of gall stones. The gall-bladder is a reservoir merely serving to store the bile and allow of its slow discharge into the intestines. It has been difficult to reconcile the apparent superfluousness of this fluid with its necessary storage. The horse and some other animals have no gall-bladder, and to all intents and purposes it is evidently of little or no utility in man. When it is entirely removed his digestion and nutrition go on just as well. Furthermore, the absence of bile from the intestines, as in cases where it is entirely removed by an external fistula, is consistent with perfect health.

Indeed, when reabsorbed into the system it is a distinct poison, being according to Bouchard, nine times as poisonous as urine. The liver may form bile enough in eight hours to be fatal if it be all absorbed. In other words, it seems to be wholly excrementitious.

Physiological experiments seem to show that it is in some way a slight but unnecessary aid to the pancreatic secretion in emulsifying fats.

The amount daily excreted is one pound. This has been watched for weeks in a case of biliary fistula with complete obstruction of the common duct. Patients discharging all bile externally, as a rule, notice no difference in their daily health or bowel function, unless it be an occasional tendency to flatulence which may be corrected by the administration of dried ox-gall in capsules, ten grains at each meal. The composition of bile allows of a separation of solid ingredients—cholesterin (which constitutes 2 per cent. of normal bile), bilirubin, all calcium carbonate—in the presence of certain altering and irritating substances. Such, at least, is all that can be said from a study of the nuclei of gall-stones. In them is found a group of degenerate epithelium cells or mucus or viscid liquid, in which at times a bacillus resembling coli commune appears, sometimes permeating these stones.

The development of the calculus seems to depend on crystallization of the excess of cholesterin and bile-salts, possibly due to temporary stagnation and absorption of water by the walls of the organ, possibly to a transient catarrh of the mucous mem-

brane, or, as Robson calls it, "desquamating angiocholitis." As far as any judgment can be formed at present, the causes are two—stagnation and a morbid state of the epithelium. It has been shown by Naunyn that the epithelial cells lining the gall-bladder exude a gelatinous substance readily changed to cholesterin crystals by acetic acid. This fact, in conjunction with the observation that pure cholesterin-stones will increase in a gall-bladder after occlusion of the cystic duct, accounts for their appearance almost exclusively in the gall-bladder.

The calculi vary as much in size as in composition and color. The smallest are like grains of sand, and have been counted up to over seven thousand in one gall-bladder. It is not infrequent to find one or two hundred of the size of bird-shot, but by far the most usual of these cases falling into the surgeon's hands are those containing from one to ten, varying in size from a chestnut to a walnut. In color they are pearly-white or asbestos-like in appearance, shining with cholesterin crystals, or finally black looking and feeling as if formed of dried licorice extract. The variations depends on the amount of coloring matter. In hardness they vary also, from being so soft when of pure cholesterin type as to be easily crushed in the fingers, up to the hardness of a vesical calculus, in which case there is an admixture of lime salts precipitated by inflammation.

The great prevalence of colelithiasis is shown by post-mortem statistics, which reveal its presence in vast numbers of people having no previous suspicion of its existence. The statistics vary in different communities but on the average one individual in ten is affected. (Naunyn). Yet Paulen says that in Denmark in over nine thousand autopsies there were over three hundred gall-stone cases or about one in thirty.

The percentage of those in whom post-mortem reveal their presence shows that in advanced age they are much more common, so that after six years one person in six is affected.

In women the disease occurs in a greater number than men—the ratio of five to two. This has been explained, for want of better reason, by tight lacing and bile stagnation.

It is notably true that when cancer of the ducts is present, gall-stones are more often found. Zenker found them in eighty-five per cent. of the cases of cancer. This and other pathologi-

cal grounds have led to the generally accepted theory of their presence or passage being the occasion of cancer growth. The absence of stone is, of course, to be expected in many cancer cases, because its very irritation in transit led to the trouble which only came after its expulsion.

While the gall-bladder is often distended by stones facetted and lying together like beechnuts, the patient is unconscious of their existence until one attempts the passage of the cystic duct. Then begins the trouble that is only rivalled by labor. The muscular coat of the duct grasps the stone, and active peristalsis of the entire canal and wall of the gall-bladder begins. Irritation engenders execretion, and an additional fluid poured out into the gall-bladder adds a VIS A TERGO which ends in expulsion. The cystic and common duct endure a dilatation proportionately greater than the parturient canal. The ducts which are of the size of a very fine quill easily suffer dilatation, so that the index finger passes readily in, and in the surgeon's experience a stone as large as the end joint of one's thumb may be found in any part of the canal. Rokintansky records one the size of a pullet egg which he found half extruded in the duodenum.

Nature is not always so successful, however. In her expulsive efforts a relatively large number of patients die while awaiting nature's ambitious ending. In a large proportion of cases a pathological change is seen which is nature's wonderful provision accomplishes by another route what she would fail in if the attempted expulsion by the papilla were persisted in. That process is ulceration, by which the wall of the canal is penetrated by pressure of the stone, and, having time to seal itself by plastic adhesion to a neighboring organ, penetrates that also and discharges the stone into the duodenum, stomach, or colon. Unfortunately, this beautiful scheme sometimes miscarries, and the discharge takes place into the peritoneal cavity or other vital parts, sacrificing the patient's life at times. The slowness of the process, however, enables the discharge to follow the direction of least resistance or where guided by natural barriers. Hence we find it discharging sometimes at the navel, having followed the round ligament of the liver sometimes in the loin or in the inguinal region.

The symptoms of an attack, which means the passage of a

stone can be almost predicted when one considers the process as just narrated. A sudden onset is almost uniform. Intense pain seizes the patient under the right ribs often shooting through to the shoulder blade. Nausea, fainting, vomiting, sweating ensue. The pain abates and returns; paroxysms compel the patient to double with pain. There is no fever. The attacks endure from a half hour to two days, but as a rule, are ended in twelve to twenty-four hours. It is probably true that with few exceptions all frequent attacks of pain which are located beneath the right lower ribs and are attributed to indigestion pains reveal so many unsuspected cases. Too much emphasis can not be placed upon the absence of acute colic at the onset of a slow advancing jaundice as indicating malignant or inflammatory obstruction.

The surgeon's special interest is with cases of constantly repeating attacks which call for interference either because of frequency, severity, or disablement. It is not uncommon to see the morphine habit established because of frequent need of its administration. One such case of ten years standing relieved by operation, and after three years the patient had still not returned to the habit.

It is a matter that rests entirely with the patient to say when the surgeon shall step in. But with the faith in the safety of operative procedures born of recent experiences one may now confidently advise operation in cases of modern disablement. The risk of leaving calculi are not small. Fever of a septic type—associated with jaundice and strongly resembling ague attacks, or to be recognized as due to arrest of the calculus partly obstructing the common duct, eroding its epithelium, allowing absorption, and leading to a train of symptoms that are a menace to life and health. The passage of very large stones painlessly is not uncommon, as shown by their history of colic. Such transit from the gall-bladder must always be ulceration, and, moreover, by ulceration into the duodenum, inasmuch as these stones are usually found in the narrowest portion of the ileum within a yard of the ilio-cecal valve.

The presence of glycosuria in connection with some gall-stone diseases had been shown by Ord to be due to funtional pancreatic disturbance through solar plexus irritation. It disappears

directly after the stones are removed, and is no contra indication to operation. Gall-stones are not uncommonly vomited, in which case they have returned through the pylorus rather than ulcerated into the stomach as has been shown by post-mortem.

"When is a stone hopelessly impacted so as to require operation?" is a question of less importance to-day than in the past. The surgeon does not do his duty by the victim if he waits for him to be nearly exhausted. The results of operative relief are so uniformly good in uncomplicated cases that to wait is only to invite complications. It will never be possible to assert that the last stone has left the gall-badder after three or four attacks, and one may now place the operation in the interval or during an attack on a higher plain of safety than that for appendicitis.

As to the method of operating and the various operations for gall-stones, I would refer you to the standard works on surgery.

Mrs. H., widow, age 56 years, mother of three children, weight 120 pounds, health not very good, rather delicate, troubled with indigestion, and slight jaundice at intervals. Occasional attacks of hepatic colic.

I was called to see her about May 1st. She was suffering with a severe attack of hepatic colic, pulse 110, temperature 103; injected morphine which gave relief. On the following day found a slight swelling in the right iliac region, about McBurney's point, very painful; had several severe chills; consultation was asked for. Drs. F. and F. saw the patient with me; the swelling continued to increase and soften for several days, slight fluctuation in same; introduced hypodermic needle and drew out syringe full of pus; decided to operate.

On May 10th, 1900, I made an incision three inches long just over McBurney's point; removed about 16 ounces thick, offensive pus, and a gall-stone passed out with it. Passing the finger up into the wound the stones were easily removed; the last two were more troublesome, as could only touch them with point of finger. They were larger; made another incision over the stones, and by passing the finger in this incision and passing a spoon curette around them succeeded in their removal. Sixteen stones were removed, the gall-bladder was ulcerated and several stones had passed down in the inguinal region.

The wound was stitched up and dressed antiseptically, ten per

cent iodoform gauze strips left in each wound for drainage. Wounds dressed daily; the lower wound was discharging bile and healing rapidly. The patient's temperature 99½, pulse 80, appetite good, rests well, rapidly recovering; will probably have a biliary fistula for a while at least.

This case shows that gall-stones may travel in strange places occasionally, and have some symptoms that might be mistaken for appendicitis.

An Unusual Case of Appendicitis.

By M. P. PERRY, Macon, N. C.

In reporting this case it is not my purpose to attempt to add anything medical or surgical to the treatment of Appendicitis, but simply present it as an anatomical curiosity. In June 1899 I was called to see Miss D., age 15 years. I found her suffering from severe pain in left iliac region at a point lower than McBurney's point on opposite side.

There was marked tenderness at this point but no evidence of tumor. Her temperature ranged from 102 to 103. There was some nausea with occasional vomiting. After a day or two there was slight pain on pressure at same point on opposite side. I gave anodynes to relieve pain, and salines until bowels were thoroughly evacuated, hot water bags were applied, hot vaginal douches and other symptomatic treatment as the case demanded. The pain and fever continued for a week, when she began to menstruate and all unfavorable symptoms abated and the patient regained her usual health.

My diagnosis at this time was salpingitis. About a month later she had a similar attack but not so severe, which passed off with a menstruation.

No physician attended her during this attack. With her subsequent menstruation she had no trouble. I did not see her again professionally until November, when I obtained the following history: That while playing at school she had a fall, which caused a very sharp pain for a while in left side. After the acuteness of the pain subsided, she still continued to feel uncomfortable, this condition remained unchanged for about four days,

when she had an attack resembling colic, bowels moved three or four times freely. This was Friday morning. I saw her in the afternoon; I found her suffering with the same train of symptoms that characterized the first attack. I treated her as before, giving her saline purgatives repeatedly the next day (Saturday), but could get no action from the bowels. So gave injections with rectal tube, with negative results. The vomiting became incessant, nothing could be retained by the stomach.

Sunday morning she began to develop symptoms of peritonitis, the abdomen became swollen, the tenderness more general, and the temperature dropped to normal. At this time I called my friend Dr. A. S. Pendleton, of Warrenton, N. C., in consultation. He agreed with me in the opinion that nothing but an early operation could save my patient. I took her to Richmond by an early train Monday morning. She was taken at once to Dr. McGuire's Hospital and prepared for operation. At about three o'clock p. m. she was placed on the table. The operation was neatly and quickly done by Drs. Hunter and Stuart McGuire, disclosing the following condition: The whole peritoneal cavity was filled with offensive pus, the appendix was found in a sloughing condition, imbedded low down on the left side, and it was with difficulty released from its malposition and brought up through the wound of incision, the omentum had sloughed about two inches, the bowels were in a semi-gangrenous condition, the tubes and ovaries were normal. Patient reacted from the operation, but succumbed six hours later.

Pylorectomy for Adeno Carcinoma, with Report of a Case.

By JOS. H. BRANHAM, Baltimore, Md.

J. R., white male, came under my charge about September 1st, 1899.

His family history was good, no cases of malignant disease being noted. His general health had been good until about eighteen months before, when he had a severe attack of malaria. This was followed by recurrent gastric attacks characterized by cramps and vomiting, the vomit containing bile. During this time he had to be careful as to food, coarse articles causing dis-

tress and a sense of distention in the upper region of the abdomen.

EXAMINATION.

Patient tall and spare, skin sallow and muddy, pulse weak and rapid on exertion. Mucous membrane pale.

Physical examination of abdomen shows thin walls, tenderness over region of stomach, which organ was slightly dilated, and the spleen was much enlarged.

Under large doses of quinia the splenic enlargement rapidly disappeared, but the gastric symptoms grew worse.

Gastric lavage gave little relief.

September 26th he was admitted to the National Temperance Hospital, and shortly afterward Prof. C. Urban Smith was able to make out a small mass at the right of the median line above the umbilicus.

This could only be felt when the patient sat with his legs well apart and stooped well forward.

The following notes by Prof. Smith elucidate the points of diagnosis:

Contents of stomach.....Acid.
Acid Hydrochloric.....9 per cent.
" Lactic.....Free.
" Butric.....Free.

Pepsin and rennet normal, contained excess of mucus. Yeast cells and a few cells resembling cancer. Salol test showed good motor functions.

Kali Iodide test showed delayed absorption. Indican in urine.

Diagnosis, cancer of pylorus.

Preparation for operation: Patient was put on a strictly liquid diet and for two days was given three grains of salol and one-thirtieth grain of strychnia three times a day.

The night before he was given a purge and immediately before taking the anæsthetic his stomach was carefully washed out with sterile salt solution.

The usual preparations of the parts to secure surgical cleanliness were made.

Operation October 12th.

A median incision about four inches in length enabled us to examine the organs in situ. The pylorus was slightly lower than normal and was freely movable. A small growth about two

inches in length and an inch broad was found occupying the anterior and inferior aspect of the pylorus encroaching or the duodenum. The length corresponded to the circumference of the gut.

This growth extended about two-thirds around the organ, and was firm but not very hard. No other abnormality was found in the neighboring parts.

The attachment of the omentum to this part of the organ was tied off and severed. The diseased part was now drawn well forward into the abdominal wound and surrounded by sterile gauze sponges. The attachments divided and the duodenum severed about an inch below the neoplasm, and the stomach about the same distance above.

An end to end anastomosis was next made by means of a Murphy button which was reinforced by peritoneal sutures. The abdominal wound was closed after carefully cleansing the parts with salt solution, part of which was left in the peritoneal cavity. All the sutures used were cat gut hardened in a solution of bichloride of mercury in alcohol one part to a thousand.

The patient was very weak and had several subcutaneous infusions of salt solution during the first twenty-four hours after the operation. He was also given about 1–10 grain of strychnia nitrate during and after the operation. He rallied slowly. For the first five days he had nothing by the stomach and was nourished entirely by the rectum. On the 14th he had his highest temperature 101°. He was allowed to wash his mouth with cold water.

On the 17th he was given small quantities of albumen and panopepton. This collected in his stomach and caused great distress, and was washed out on the 19th by the stomach tube. This gave great relief, and was continued about every day for two weeks. Most of the food taken apparently remaining in his stomach, the rectal feeding was continued during this period. On the 29th, seventeen days after the operation, the Murphy button was removed from his rectum by the resident physician. He gradually became able to digest food and gained strength slowly.

His temperature was nearly always sub-normal, both before and after the operation; this I attributed to the bad nutrition due to insufficient assimilation.

He left the hospital Nov. 20th and returned to his home in North Carolina, weighing at this time 84 pounds. He reported by letter from time to time to me, and gradually gained strength and weight until, in April, 1900, he had reached the very respectable figure of 147 pounds.

Pathological report, Prof. R. L. McMur:

"The growth is a carcinoma. Showing at points sufficient glandular arrangement to justify the name Adeno Carcinoma. Beside the principal mass a number of small points of invasion of the surrounding tissue is noted.

The growth seems to have encroached on the mucous membane of the duodenum to a great extent."

General considerations:

The recent great improvement in operation technique and in means of diagnosis giving better results have aroused much interest in the surgical treatment of disease of the stomach.

Pylorectomy was first done in man by Pean in 1879, and the first successful case was by Billroth, 1881.

The mortality was high in the early cases, but recently it has been much diminished.

The following table is probably not nearly complete, but will give a general idea of the mortality and also of the improved results of recent operations:

Operator.	Cases.	Recovered.	Died.
Winslow	60	16	44
Mikulicz	32	8	24
Billroth	19	8	11
Guinard	299	194	105
Czerny	29	18	11
Kronlein	24	19	5
Carle	14	11	3
Mikulicz	20	16	4
Hartmann	10	6	4
Wilmott Evans	13	12	1
Morrison	5	5	0
Kocher	57	52	5
Maydi	25	21	4
Roux	12	9	3
Tuffier	9	6	3
Lambotte	5	4	1
Van Kleef	4	1	3
Leeds' Infirmary Staff	7	3	4

Karg	4	4	0
Gussenbauer	13	7	6
Mayo	3	3	0

—*American Journal Med. Science. 1885.*
—*Wemi Med. Nov. No. 24.*

Referring to the above table we find that the cases collected by Winslow and Mikulicz (1 and 11) were the early cases done before 1855. They are probably duplicated to an extent, but as they give almost the same results this does not impair their value for comparison.

Taken together they show a mortality of 74 per cent. While the rest of the table taken from an article from Mayo Robson, which shows the combined mortality of both the old and new cases, shows 572 cases, recovered 396, deaths 176. Mortality 30.4 per cent. Could the old cases be eliminated, this mortality would be much further reduced.

Lancet, March 24, 1900L.

The remarkable result shown by Kocher 57 cases with a mortality of less than 9 per cent. gives hope that we will soon be able to class this as one of the operations, not excessively dangerous.

The remote results of the operation unfortunately have not been so good. Most of the cases being relieved for only a short time, and later showing recurrences. Fifty successors of Kocher show one woman living ten years without recurrence, one five years, one three years and one two years. Four died of other troubles after three or more years, so we may claim these eight cases as permanent cures out of the fifty-seven cases operated on. The other cases of the fifty-two who survived the operation were made more comfortable and in the aggregate had many years of useful life added to their existence.

I think that we may now consider some of the general facts, bearing on the cases and influencing the results of the operation.

Causation. Unfortunately we are still in the dark as regard to the ætiology of malignant disease. True, much recent work has been done along this line and reports of the same have been made. This will no doubt be of great value in the future, as yet, however, we have nothing accepted by the profession as proven. We have good reason to hope that we shall soon have

light on the cause of this terrible scourge, and that this may lead to improved methods of treatment.

Diagnosis. Great advance has been made along this line. Some points in the natural history of the disease will help us in coming to a correct conclusion. Cancer occurs usually after middle life, but there are many exceptions to this rule.

* A paper by Prof. Wm. Osler and Dr. McCrae gives the proportion under thirty years in a collected table of 3257 cases 2.5 per cent. In 150 cases from the Johns Hopkins Hospital four per cent. were under thirty. Men are more often the subject of gastric cancer than women. The position of the growth is most frequently the plyorus, over sixty per cent. of cases being found here. Among the symptoms pointing to this disease we note briefly, pain, dull, often continuous, and increased after eating, belching of gases, often foul, vomiting of partly digested food, later mixed with decomposed blood (coffee grounds), loss of weight and energy, temperature not infrequently sub-normal, but may be elevated in rapid cases near the end.

Physical signs. Usually some dilation of stomach when growth is at the plyorus. The presence of a mass can usually be made out by examining patient frequently and in various positions (the value of change of position was well illustrated in my case). The stomach should be examined empty and distended both by gas and fluid. Great assistance can be obtained by careful examination of the contents of the organ. Absence of H Cl, while not a positive sign points strongly to cancer, the finding of parts of growth in the wash water may enable us to make a positive diagnosis; unfortunately, this is possible only late in the disease, and often after the time for radical operation has passed. Xray may help us make out a mass.

Finally the exploratory incision should be relied on more frequently; such procedure should be considered as almost harmless as they are in other parts of the abdomen, and should be employed early, as soon as we have strong suspicion of cancer. This will enable the surgeon to attack the growth while it is still small.

When a neoplasm is found after opening the abdomen the selection of the proper operation for the case is of great impor-

* New York Medical Journal, April 21, 1900.

tance. If the lymphatic glands are involved, and many adhesians are present, the operation should be abandoned; or in case there are symptoms of stenosis present a gastro enterostomy should be done. Pylorectomy is indicated when the growth is in the pylorus, and when the glands are free and the organ not much adherent.

Partial or complete gastrectomy is to be done when the tumor occupies other situations and the organ is free from adhesions.

When adhesions are present the operation become excessively dangerous and even when successful recurrence soon takes place.

The method of operating differs much with surgeons. Kocher first does a gastrojejunostomy and some weeks later excises the mass, closing the two cut ends of gut. His results have been better than any other surgeon who has had a very large number of cases. He does not like the Murphy button, as he says it often fails to pass, and he reports one case where it was found in the stomach fourteen months after the operation. Dr. Mayo, of Rochester, Minn., who has had five successful cases and no failures, always uses the button. Its advantages are the ease and rapidity with which it enables us to close the bowel. The slough which it causes is probably advantageous, as it removes tissue which is near the growth and is possibly infiltrated. It is not necessary to draw on the organ to so great an extent when it is used, thus dragging on the nerves and other important parts is avoided, which, together with the saving of time, lessens the shock and the other bad results of long exposure and manipulation of the parts.

The case before you illustrates some important principles, to which before closing we will call your attention. The marvelous improvement in our patient's general condition and the small extent and the slow growth of the tumor lead us to hope that this will be one of permanent cure. The repeated washing out of his stomach after the operation relieved the patient of great distress and probably saved his life.

The rapid increase of cancer during the last few years makes the report of every operation more important than formerly. Too many physicians and surgeons tend to despair the unfortunates who are attacked by this dread disease. Many, like Micawber, are waiting for something to turn up from the laboratory

workers. That some other means of destroying or preventing this one of our worst enemies may be discovered, we all hope, but it would be the height of folly to fold our arms and wait for such a consummation. Let us rather try to improve our known methods of attack. Nothing will help us so much in this direction as early diagnosis and operation. Much is due to the stomach specialist in helping to perfect means of diagnosis, but often he treats these cases until the disease has advanced too far. Careful lavage and diet not infrequently lead to temporary improvement; both physician and patient are soothed into a fatal sense of false hope, and procrastinate until the time for radical operation has passed. The exploratory operation will probably do more to save these poor unfortunates than anything else, and should be more frequently employed. Practically all these cases are operable at some period of their existence, and we have reason to hope that in future they will be referred to the surgeon at a time when the tumor can be successfully attacked, and not only temporary relief is possible, but when a large proportion can be permanently cured. The cases of absolute cure of cancer in other organs is becoming more and more common; surely we can hope for this same advance in cancer of the stomach where glandular involvement comes late in the disease.

DISCUSSION.

Dr. Chas. J. O'Hagan: I can only say that I think the Society is indebted to Dr. Branham for the remarkably lucid and interesting description of a very remarkable operation. I was in Baltimore at the time and saw the patient there, and he looked in the last stages of existence, and I thought the operation could not be successful. The doctor has been kind enough to give us some information about the operation, and I think he deserves a vote of thanks, and I move that he be given it. The motion was seconded and adopted unanimously.

OBSTETRICS.

Shall We Use Anodynes and Anesthetics in Midwifery?

By N. P. BODDIE, Durham, N. C.

THIS is a question of very great importance and perhaps a good many of you may think has been answered long ago in the affirmative. But if you refer to the rank and file of the profession, you are very much mistaken.

A good many good physicians and a good many of the laity are bitterly opposed to and prejudiced against their use—so much so that those who would use them are afraid to do so and use them at their own peril.

Now, if I can provoke a free and open discussion of this important subject and thereby break down some of this opposition, I will feel like I have done a good deed and won the good will and approval of the suffering mothers, as well as the more sympathetic of our profession.

The first duty of any physician is to restore his patients to his or her normal condition, and to do this with as little pain and suffering as possible. Therefore, we conclude, if by using Anodynes and Anesthetics in our obstetric practice we can relieve our patients of pain and suffering without damage to them, it is our sacred duty to do so.

I do not say we can use these pain relievers indiscriminately and in all cases, but I do say, so far as my experience goes, there are very few cases, if any, in which we cannot use to advantage one or the other.

One of the greatest difficulties in the way of their use, as I have already said, is prejudice in both doctors and laity, and consequently if used at all, so little is used or so unintelligently given, they do no good and possibly harm. I will try from experience to give some practical suggestions on this subject:

Chloral Hydrate, I think, is one of, if not the best Anodyne and relaxant we have. We must have time, two to four hours to get our patient under its influence, and it must be given in full

doses, twenty to thirty grains every hour or two till one to two drams are taken. It takes more for some patients than others, usually about ninety grains are sufficient. You must give it until you get the physiological effects—patient semi-conscious and sleeping, awaking only during the contraction. Chloroform, say Squibb's, (only the best to be used) to be given during the contractions, anticipating them a little. Beginning the latter part of the first or dilating stage and continuing until the presenting part is delivered. And thus your patient passes this terrible ordeal without pain or her knowledge of the transaction. It is hardly necessary to say our patient requires our closest attention.

But it pays in more ways than one. We win the love and esteem of our grateful patient, we have the approval of our own conscience of having relieved suffering humanity and the commendation of all good people, by largely removing the incentive to commit possibly the most prevalent crime of our times, criminal abortion and prevention of childbearing.

Are not all physicians largely responsible for this state of affairs, in paying so little attention to the intense suffering of obsteteric patients.

Morphine deserves a large place in this subject. Who would try to practice medicine without a hypodermic syringe and morphine? None, I dare say, and they are as indispensible in obsteterics as in general medicine. A hypodermic of a half grain of morphine, given when your patient is tired and worn out with nagging pains and rigid os, gives her 1 to 3 hours of sweet and refreshing sleep, and when she awakes rested, os relaxed and contractions normal and with the aid of chloroform completes labor in comparative comfort and in a few minutes.

When you have exhausted your skill in trying to stop abortion or miscarriage, tampon the vagina with antiseptic gauze or cotton, give a full dose of morphia, leave your patient to rest, and when you return in a few hours, say from five to twenty-four, you will find the os dilated and often the fetus and membranes lying loose in the vagina and so have very little trouble or pain in clearing the parts.

I do not say as routine practice, we should give a hypodermic of morphine after delivery, but I do say that most of our mul-

tipara will be relieved of a good deal of suffering thereby.

It is barbarous to let patients suffer from those agonizing "after-pains" as some do, when they can be relieved so easily and promptly. I find the coal tar preparation with dover's powder and mono-bromate of camphor act nicely in these cases, but must be given in full doses. In some cases nothing acts so well or seems to do at all but morphine given hypodermically.

I think we all will use more morphine in our obsteteric practice in the future, if we will give it a fair trial, especially in rigid os and cramp contractions. One objection that is usually given to Anesthetics and Anodynes in midwifery is increased danger of post partum hemorrhage, and this may be true. So "fore warned is fore armed," I take no risk but give a full dose of ergot on completion of second stage and I also keep my hand on the uterus, gently but firmly pressing and kneading till the placenta is expelled, gently pulling on the cord, and so avoid infecting the vagina after delivery. Watch closely the uterus for some time, to be sure that it is firmly contracted. If there seems to be any tendency to bleeding, I give a hot antiseptic douche at once. So I have never had any bleeding to bother. Another objection given to the use of Anesthetics and Anodynes is prolonged labor, and sometimes this seems true, but I have seen just as prolonged labors when none were used. But agreeing that it is the case, is it not far better to deliver our patients in comparative comfort and with least possible danger of lacerations, with a slow labor, than to deliver them with a quick labor and have torn parts, intense agony and an exhausted and disgusted patient?

Let's all resolve we will do more to relieve the suffering motherhood of our country. None are more deserving and none suffer more or have so little done to relieve them.

Emergencies in Obstetrics.

By A. G. CARR, Durham, N. C.

Having been requested by the chairman of the section on Obstetrics and Gynecology to read a paper on Obstetrical Emergencies I offer the following:

You will notice in the first place that any paper on Obstetrical Emergencies, must of necessity be a pregnant one; and, secondly, must be suggestive of instantaneous action on the part of the accoucher. We must be prompt in the application of our remedies, for time is precious. Here we have no case of chronic sore leg with protracted skin ulceration, which has been treated by many of our brethren as well as ourselves, and still it refuses to heal. It is no care of carcinoma of the mammæ, which we have watched for weeks and months in order to be certain of our diagnosis before proposing an operation. There is no chronicity about it, and of all things it is most acute. We have no time to call a consultation of our conferers and hear arguments pro and con, and then set a day for operation. Our patient may be doing very well, indeed, when suddenly there is a thunder-clap in a clear sky.

Something alarming has happened! An unexpected event has occurred, and a pressing necessity springs upon us. No time for consultation; no time to look up the event in our text books. Disease, weakness, exhaustion and death are now doing fierce battle for the life of our patient. Friends stand around us weeping and wringing their hands and appeal to us in heart-wringing words. While we may be astonished at the sudden change for the worse, woe is the physician who becomes bewildered and loses his head! It may be a case of abortion, or labor at term, and we must grasp the opportunity and act immediately. It may be Puerperal Convulsions, with all its horrors; in either case prompt action is our only remedy.

I propose to draw mostly from my own practice in these cases, and very little, indeed, from my text books. Whether in abortion or labor at term, hemorrhage and convulsions are our greatest foes. The loss of blood is a loss of vital fluid. Shock is another thing to be avoided. A protracted abortion is a tedious and dangerous thing to contend with. Here the loss of blood is generally gradual, and septic poisoning easily intervenes. Many of us are what may be called *conservatives* and probably have blamed ourselves for not acting more promptly in some cases that slipped through our fingers. We allow too much blood to be lost before we see the uterus thoroughly emptied, and our patients die with exhaustion, or have a very tedious convalescence. Troublesome

midwifery may be an old adage, but don't trust it too far.

A lady friend of mine was three months pregnant. She visited a distant city with her husband, returned home after seeing the sights with a slight uterine hemorrhage. She sent for me, and I placed her in bed with the remark that she would certainly speedily improve if she kept her bed three or four days. After enjoining secrecy on me, I promising compliance on her part, I prescribed and left her. The next day a lady friend called and was surprised to find her in bed; she rallied her for being lazy, and was told that her physician had ordered her to bed. The lady friend, not knowing the real cause for my orders, told my patient not to heed what the doctors said, but to get up and go with her to church. Reluctantly she consented. She returned from church, took her dinner and was suddenly seized with an alarming hemorrhage. I was walking along the street and was called in haste, my instruments and medicines being at home in my buggy. An alarming scene presented itself—the middle of the room, where the patient sat, was literally deluged with blood, and she lay on the bed gasping for breath, while the pallor of death played on her countenance; she was pulseless and unconscious. With no disinfection of hands I made a vaginal examination and found the os dilated and foetus just to be reached with the finger. I seized a handkerchief that I saw in a drawer and endeavored to plug the os, and thus to stop the blood that was gushing like a mill sluice from the gaping os. I tell no lie when I say that the handkerchief was literally flooded away in the outpouring blood. I grasped the anterior and posterior lips with my fingers and held them firmly together and made abdominal pressure-above. I sent the husband for another physician and the cook was sent to the nearest drug store. I hastily explained the situation to the doctor on his arrival and called for the placental forceps that I had especially sent to him for. Would you believe it, he handed me a small pair of mouse-tooth forceps, which I laid aside in disgust and forced my hand into the uterus, and with much difficulty finally succeeded in extracting the fetus and afterbirth, contracting the uterus, and thus stopped the hemorrhage. Need I say that her life was despaired of, but she finally recovered after a tedious convalescence. Here nature would have allowed the patient to have flooded to death,

and only a prompt pressure on the os and a rapid emptying the uterus saved the woman's life. You might ask me the question why I delayed emptying the uterus and sent for another physician, and I answer that knowing she had lost so much blood I was really afraid to relax my pressure on the uterine lips and insert my hand for fear she would flood to death. Ergot was given and ammonia inhaled to bring about consciousness. There is no medicine, there is no instrument to equal the physician's fingers, and even the whole hand, in such emergencies.

I saw one lady die from shock of child-birth. She was raised in Florida, married and lived latterly in North Carolina, and was a subject of chronic malaria. She had intermittent paroxysms in her earlier pregnancy. She was delivered by my partner without much trouble, but she reacted poorly. An intelligent lady nurse inspected the parts for hemorrhage, and showed us the white napkins for the reception of the lochial discharges. She lost comparatively little blood either before, during or after child-birth. I was called on account of the collapse and found feeble pulse, sighing respiration and great prostration. Ergot and all known external and internal stimuli were used, and nothing availed, as she weakened and died about two hours after delivery. Again the bed, napkins and clothing were inspected, and she died with a contracted uterus.

I will narrate another case of nervous shock which resulted in death. I once delivered a multipara who had been treated for some uterine disease by another physician. My first call was to attend her in labor. The labor progressed finely and she was soon delivered of a bouncing baby, but, I regret to say, the child was totally blind. I sent the child from the room to the kitchen, some thirty feet away. The mother did not know the child was blind, and I preferred to inform her later. About an hour after this, as I was setting by the bedside, I was hastily summoned to see a child in convulsions about a mile away. I refused to leave my patient, as I had a presentiment of danger should I leave the house. The mother heard the pleadings of the child's father, and called me into the room and begged me to attend the little patient, assuring me she never felt better in her life. To gratify both parties I yielded, but went by the kitchen and told the nurse under no circumstances to carry the child into the house,

or to tell the mother of the blindness of the child. I had just finished prescribing for the convulsions of the child when I heard the clattering of horse hoofs along the road, and the husband appeared calling loudly on me to hurry back to his wife. I was there as soon as horse-flesh could carry me, and a horrid sight presented itself to my view. There lay my lately delivered patient in the throes of terrible convulsions, helpless, struggling and unconscious. I hastily inspected both her and the bed for hemorrhage, and found none. I found the womb well contracted and only drew about half a pint of normal urine. Chloroform was my only remedy, and I used it sparingly. Hypodermic medication was then unknown, and she vomited anything put in her stomach. Consultation was called for and obtained, but the patient died three days later without regaining consciousness. I could not account for the death, until three months later I learned that the nurse entered the room after my departure, and the mother asked to see her baby. The nurse remarked that the doctor said she must not see it until his return, but that the "doctor did not know everything," and that she would show her the baby "if she would not tell the doctor." The bargain was made, and the nurse remarked that "you must not get excited, honey, *as the child was as blind as a bat*, but the good Lord knew what he was doing or he would not have sent the child that way. The mother now demanded the child, which was brought into the chamber, the mother rising in bed to see it. She looked at it steadily for a moment, and then with a scream and a kick and a lunge she fell back into violent convulsions from which she never recovered. Her death was due to nervous shock at the sight of the blind child. How else do you account for it?

Another case from private practice: A young girl became dropsical. Various home remedies were given with no effect and the doctor (your humble servant) was sent for. After much questioning I suspicioned pregnancy and requested an examination. To this the patient objected and the parents sided with the patient. Later I consulted with the mother and she hooted at any insinuation of pregnancy. I advised the mother to keep quiet, but did manage to feel the girl's belly through the counterpane and gown. In some way the young girl heard of my suspicions and I was called a liar and a quack. I anxiously

awaited and was not astonished to be called about five months later. External application only allowed, when I applied my ear, when lo, the fœtal heart was heard! I gently broke the news to patient and mother and was about to be driven from the house, when she screamed with labor pains and I made a hasty vaginal, and felt the sutures of the skull, and in less than an hour there was a lusty male child born, the patient protesting even after delivery; then the patient's mother broke loose in her fury, berating her daughter and shaking her fist in her face, and calling her all sorts of foul names. For a few moments it did seem as if something had broken loose in Georgia, sure enough, the patient crying and moaning, the mother berating, and myself calling a halt and endeavoring to act as peacemaker. Nothing availed until the young girl gave a scream and went into a terrible puerperal convulsion. Everything now changed, the patient's mother implored and beseeched her young daughter to forgive her, as she never would scold her more, the daughter struggling and writhing with horrible grimaces, her tongue protruding, swollen and bleeding, and I, with chloroform and hypodermic syringe, endeavoring to allay the nervous storm. I succeeded, and she slept for several hours, and awoke to find the kindest and most doting mother you ever saw in your life. She recovered speedily without further mediation. What caused this convulsion? Again I say, it was due to nervous shock.

Be ready for hemorrhage in pregnant cases with ergot, ammonia, strychnia and nitro-glycerine, and be certain that your uterus is well emptied, by using your fingers and hands even to get the information. Be ready for puerperal convulsions with chloroform, chloral and morphia, and your hypodermic syringe is your best instrument here.

Be ready for septic poisoning with your uterine douche and disinfectants, your curette, your purgatives and stimulants, but keep the uterus sterile by all means. Don't be afraid to go into the uterus. Dilate it, if necessary, for here is generally the focus of infection. I am one of those who believe that all cases of puerperal infection is due to a lesion somewhere in the utero-vaginal canal. To the question as to whether I generally use vaginal douches in normal labors, I answer, that I do not; but I do believe that it would be better to prop our patients up in

bed sooner than we do in order to drain the secretions from the posterior vaginal fornix. I believe that foul excretions often pocket there and thus give rise to septic absorption.

As regards Venesection or Phlebotomy I will say that I have bled some of my patients, and that freely, but my confidence in this measure is very limited. I never depend on it alone. Chloroform, chloral and hypodermics of morphia are my main stays and generally give me satisfactory results.

One more case from private practice: A young lady friend of mine, whom I had treated about ten or twelve years before for typhoid fever, and who recovered after an alarmingly desperate case, married and approached her confinement. She had headaches, vertigo, edema of lower extremities and albumin in her urine. Her symptoms increased as she approached her confinement in spite of treatment. I was examining her urine, one evening just after supper, in my office, when several doctors entered my office and remarked that the medical society would meet there that evening. I showed several of them the specimen of urine, and remarked later during the session of the society that I expected trouble at the lady's confinement. A short time after I was called to her, and finding her in labor removed her to the hospital, in a closed carriage. As she waited for special preparation for her room, she suddenly went into a violent puerperal convulsion. I called another physician who happened to be in the hospital and rapidly passed out and sterilized my forceps. While doing so the doctor sent me word that my patient was in a second convulsion. I rushed in and found the os about half dilated, and succeeded in passing the forceps and delivering the child while my patient was in a state of unconsciousness, no chloroform being required. For several days she was excitable and nervous, but moderate doses of chloral controlled this, and she went on to a rapid convalescence, her puerperal Bright rapidly disappearing. She is now again pregnant, but am glad to say that I examined her urine a week or two ago and found no trace of albumin.

Gentlemen, of course, it is not expected that I should go or attempt to give examples in all cases of Obstetric Emergencies. This would require a *book*, not a *paper*. I would have to speak of,

Induction of Premature Labor,
Forceps,
Extraction in Foot and Breech Presentation,
Version,
Craniotomy and Embryotomy,
Cæsarian Section,
Contracted Pelvis,
Abnormal Sexual Organs.
Abnormalities of Fœtus,
Placenta Prævia and Eclampsia,
Prolapse of Funis,
Puerperal Fever in Its Multitudinous Forms,
Puerperal Insanity,
Phlegmesia Dolens,
Diseases of the Mammæ, &c., &c.

Being aware of this fact I will submit this paper from cases occurring in my own practice. May my clinical experience be of benefit to you.

DISCUSSION.

Dr. Stamps: There is nothing more heart-rending than these convulsions, and the paper was a most excellent one. I would like to add my testimony to the value of a drug other than that mentioned, and that is veratrum viride. Recently I had a severe case and I injected into the arm a syringe full of veratrum viride, 25 minims probably. Consciousness was restored, circulation improved and I could but feel the value. I have had other cases of the same kind. I say this because it is one of the diseases we need all the remedies we can secure. If there are any gentlemen who have not tried this remedy I would respectfully advise them to try it.

Dr. H. B. Weaver: I suppose nothing is more profitable sometimes to us and the Society than the relation of some of our personal and practical experience in such cases as Dr. Carr has referred to. I have been attempting to practice medicine for a quarter of a century and in that time I have delivered nearly 2,000 women. Two or three months ago there occurred to me one of the worst cases of postpartum hemorrhage that it has been my misfortune or fortune to attend. The husband of

the wife came hurriedly and as I was preparing to depart I happened to notice on the mantel a bottle of ergotole. I put it in my pocket and made haste to the case and found the woman in labor. On the way the husband remarked his wife had been attended by a physician in an adjoining county at a previous confinement and that she wasted a great deal of blood, probably a bucketful. The labor was normal and went on without anything to call attention until after the child was born and the delivery of the placenta came. I took the precaution to give a hypodermic of ergotole as soon as the child was born. I followed the Crede method. As the child came out there came such a rush and gush of blood as I have never seeen in all my life. I still had hold of the uterus. I asked for vinegar and they had none. I asked for cotton and hurriedly made a tampon of cotton. She had now become almost moribund and tamponed that uterus as quickly as possible with my hand until I had filled the uterus full of cotton, and then I filled the vagina full of cotton. She was still bleeding and I gave another hypodermic of ergotole, and then a hypodermic of one-twentieth of strychnine. I took out the cotton and retamponed and packed it in with all the force I thought the case would justify and for an hour and a half I held that uterus with the Crede method, and with the strychnine repeated in two hours and with hypodermic of ergotole and I believe I saved her life with the heroic quick treatment in the emergency, and I agree with Dr. Carr's idea that we should be prepared to meet any and all emergencies. Of all the cases I have ever seen that was the most fearful and alarming at the moment and but for a little self-possession I think the woman would have died.

DR. MARSH: I would like to ask Dr. Weaver if he uses the hot water intra uterine injection?

DR. WEAVER: If I have time, but I use cold water externally with towels, as cold as I can get it.

DR. MARSH: I wish to say that I have had experiences with several cases of very serious postpartum hemorrhage and it has been my fortune to be able to get hot water in my cases, all of which reacted very nicely to the intra uterine injection of hot water. I remember distinctly a case I had last year where the patient, as the doctor said, had a most profuse hemorrhage, from

which she was exhausted and pulseless and almost moribund, and the treatment had no effect whatever while the tampons were being prepared. The tampons were saturated and the hemorrhage kept on through the tampons almost as freely as before. When the hot water arrived the exigency was so urgent that I frankly confess I used the water almost at a boiling point, so much so that I feared sloughing of the parts, but it controlled the hemorrhage and with the proper care the patient came around all right.

Dr. Weaver: I had some apprehensions that there might be laceration of the cervix. I used just such cotton in making the tampons as could be gotten in the house. After removing the cotton next morning I irrigated the vagina and uterus with an antiseptic injection of hot water, and there was no laceration of any consequence to be found, but the hemorrhage must have been intra uterine. What was to be done must be done at that moment or the woman would die. The best thing I saw was the tampon. The woman would have died before I could have used hot or cold water sufficient to stop the hemorrhage.

Dr. Marsh: I wish to say that I did not ask the question to make the point that the doctor's treatment was not thoroughly proper, but wished to illustrate the cases that had come under my treatment.

Dr. Morehead: I wish to ask Dr. Weaver if he thinks it advisable to use Crede's method in expressing the placenta when he fears postpartum hemorrhage?

Dr. Weaver: It has always worked well with me. The uterus responded and then relaxed. By proper manipulation and expression it contracted very thoroughly, but it would not be long until it would relax again.

Dr. Long: I should like to know whether the profession think it a good idea to give anything to the patient while there is anything inside the uterus.

Dr. C. J. O'Hagan: I must disagree with Dr. Weaver's tamponing the cavity of the uterus. He said his patient had the good fortune to recover, but I think the concensus of opinion is among all obstetricians that the most expeditious way to produce uterine contractions which prevent hemorrhages would be emptying the uterus, nor do I see how it was a possible thing

after packing the womb with dirty cotton to produce uterine contractions. I doubt very much whether such a procedure as that would be attended with the good fortune which followed Dr. Weaver's case. There are quite a number of things for emergencies in postpartum hemorrhages. Hot water is one of the most reliable. Another thing is the injection of tincture of iodine into the uterus, which will shut it up quick. It is better to take the water solution of iodine. A little vinegar introduced is good. I wanted to be certain that Dr. Weaver had packed the uterus with cotton.

Dr. Weaver: What I said or intended to say was that I only packed the os with cotton, and packed the vagina with cotton.

Dr. O'Hagan: The tamponing of the vagina is perfectly legitimate, but I think you said you packed the uterus.

Dr. Morehead: I would like to ask Dr. O'Hagan how about the injection of iodine with the flow of blood Doctor Weaver describes?

Dr. Weaver: I would like to ask Doctor O'Hagan what he would have done under the circumstances?

Dr. O'Hagan: I should have raked out the clots of blood or anything that might have caused the bleeding, used cold water, passed my hand into the cavity of the uterus and a little motion of the closed fist would have produced contractions.

Dr. Weaver: I did that and there was no benefit, and she was dying, was as good as dead.

Dr. O'Hagan: I congratulate you on the recovery.

Dr. Marsh: I have had experience with a number of cases of that kind and my results have been that after the placenta was delivered if you would sit by the bedside and keep your hand on the uterus and gradually knead the uterus 5 or 10 minutes or longer that you had good results in controlling that excess of hemorrhage and in some cases I have seen where patients had more or less fever and had done quite well before, they would get along very nicely by such a simple procedure.

Dr. Carr: You remember I remarked I would give mostly my own experience. I will state I have never used veratrum viride in labor. Hemorrhage may occur at any time in labor. The first hour or two it may be more usually expected, but cases are reported where it occurred 11 days afterwards. Hot water

is not always available. I have been advised by an old friend of mine who delivered a good many cases to try ergot through the vagina by means of a syringe. It is much better than by the mouth. He says the uterus will snap it up like a fish after a fly. Old Dr. Meigs used to say never tampon in labor cases, but we are smarter than Dr. Meigs was. We do not fear intra uterine work as he did. Of course, intra uterine treatment is a procedure I would not advise any man to try first, but intra uterine treatment in cases of postpartum hemorrhage is feasible and practicable and is right when you have tried other remedies. Pack your uterus with absorbent gauze or anything that is aseptic, that is perfectly feasible.

Dr. Stanton: I want to advocate the use of the tincture of veratrum viride. It has been my fortune or misfortune to contend with an unusual number of puerperal convulsions, having had three cases in rapid succession, covering a few months. In the management of these cases I was thrown on veratrum viride as my only resource except the lancet, and the first case was an anæmic lady who would not bear the lancet. I used veratrum viride in 10 drop doses hypodermically. I have resorted to veratrum entirely unless in the first convulsions. I experimented until I used as high as 25 drops in one and one-half hours. Never after I brought the pulse to 60 a minute did I have any convulsions, and in every instance it proved sufficient.

Dr. Summerell: I wish to endorse the remarks of the gentleman who has just taken his seat. I have as much confidence in the use of veratrum viride in convulsions as in quinine in malaria and his experience coincides with my own. If I had pulse 100 to 120 and I bring the pulse to 60 I am as sure of the convulsions ceasing as I am of anything according to a human being after the administration of any drug, and I think veratrum viride is one of the surest drugs for a physician when he approaches the obstetrical chamber.

Dr. Carr: Does it produce nausea in this dose, Doctor?

Dr. Summerell: I have had it to produce nausea only once.

Dr. Carr: How does it stop the convulsions; what is the physiological action?

Dr. Summerell: If Dr. Carr will tell me what is the distinct pathology of puerperal convulsions then I will try and give him the physiological action of this drug.

DR. CARR: I thought everybody knew puerperal convulsions had different causes, extreme nervousness, Bright's disease. I want to know the effect of veratrum viride. Does it correct nervousness or cause vomiting or what?

DR. SUMMERELL: My idea is that under certain conditions there is a toxin and that toxin poisons the circulation of the brain or the whole nervous system, that the convulsion is probably due to an excitement of the whole nervous system by this toxin being thrown in much larger quantities on the nervous system and the action of veratrum is in slowing the circulation and thereby reducing the quantity of toxin thrown on the nervous system. That is purely theory, and the only theory that I have that comes anywhere near satisfying me about veratrum viride.

DR. CARR: I am not opposed to veratrum viride, but I have never had much experience with it. I am glad, however, that I have another remedy. But it is no use to say the patient gets well and not know how the medicine effects him. I have given many a dose of medicine when I did not know what was the matter with the patient and he would get well.

DR. MCMULLAN: I consider veratrum viride one of the best remedies, but I do not rely on it exclusively. My remedy is atropia, veratrum viride and morphine. I have been taught that in puerperal convulsions there was affectation of the brain due to the spasm of the capillary circulation and whenever a woman had a puerperal convulsion, veratrum viride would dilate the peripheral circulation, and hence its effect.

DR. JULIAN: I think, sir, that the majority of cases of puerperal convulsions would die without the proper remedies. I think all the cases would die without the proper remedies, and my experience is that veratrum viride has the same effect as bleeding. I cannot agree with Dr. Summerell that it destroys toxin, but it lowers blood pressure and I think it preferable to bleeding. It relieves congestion of the brain.

DR. SUMMERELL: I certainly did not say that veratrum viride destroyed toxin in the blood. What I wanted to convey was this: that it prevented the rapid carriage of those toxins to the nervous center, that was the idea.

DR. CARR: I wish to say in closing that I am glad that these

gentlemen speak so highly of veratrum viride and I am much obliged to Dr. McMullan for his explanation, which is probably the correct one. I was trying to get at that. In future I will give it a trial when I cannot relieve with chloral, chloroform and hypodermic of morphine, which I have always done.

Abortion.

By E. T. DICKINSON, Smithfield, N. C.

This paper shall be an effort at brevity embodying points not beyond discussion, and yet the properly recognized and well tried teachings and methods which should be remembered in the management of every case of abortion coming under our professional observation.

Expulsion of the ovum before the period of viability will be understood as abortion, that occurring after the child is viable to within a few weeks before the normal termination of pregnancy, as premature labor. The period of abortion extends to the twenty-eighth week of pregnancy, and on account of improved incubation is growing shorter. Premature labor includes the period of the twenty-eighth to the thirty-eighth week of gestation and for the same reason is growing correspondingly longer.

Abortion is of frequent occurrence and serious nature—frequent to the extent of at least once in every mother-hood. Judging from Whitehead's statement that thirty-seven out of every one hundred mothers abort before they reach the age of thirty, serious to the extent approaching consumption in that sex when considered as the starting point when neglected of various diseases of the uterus, as sub-involution, chronic metritis, and endometritis leading to invalidism, as well as the numerous deaths by sepsis and pelvic peritonitis.

The causes of abortion are inconceivably infinite, may appear infinitely small, obscure and inevitable; or, infinitely, gross, bold and despicable. They may be grouped into paternal, maternal, therapeutic, mechanical and criminal. The last two are induced abortion. It occurs most frequently between the ninth and sixteenth weeks of pregnancy, and at the time corresponding to the natural monthly period. It should ever be remembered that

in most cases the diagnosis is a simple affair, but the practitioner will meet with no condition which at times will puzzle him to the same degree to answer these questions: (1) Has the woman been pregnant? (2) Has she aborted? (3) Is the abortion complete or incomplete? (4) Is it criminal? These must be decided before intelligent prognosis and treatment can be determined.

If the woman is found pregnant and abortion threatens it is very important to know whether or not it is unavoidable, as the anodyne treatment of merely threatened abortion renders the inevitable type more slow, incomplete and complicated. If there has not been much hemorrhage nor continuous uterine contraction it is safe to consider the abortion as merely threatening. The patient must be put at once to complete rest and placed as soon as possible under the influence of drugs that will diminish nervous sensibility and weaken muscular action—opium in the form of suppository being perhaps best and is more generally used in this country. If the abortion can be prevented the uterine contraction will soon cease, the bleeding stopped and the patient usually will drop to sleep. If this result should not follow the treatment within a few hours, hope of delaying abortion should be abandoned and measures should be taken to secure complete and early expulsion of the ovum. These dangers are best guarded against and at the same time complete expulsion of the ovum secured by the proper use of the antiseptic tampon. After several hours when the tampon is removed, and if necessary renewed, the ovum will be found adhering to it. Administration of ergot will also aid in the early completion of the process of expulsion. If the abortion is *surely* complete, the after treatment will be simple and period of recovery uneventful. If it is found incomplete, as will most often be, since in the early months of gestation, the large mass of the deciduous membrane is almost certainly retained in the uterine cavity, and later the placenta being frequently left behind, the treatment will not be so simple and the prognosis so satisfactory.

Here it is that there is so much difference of opinion as to the proper course to pursue—whether the conservative or the active course of removing at once the substances in the uterus which may give rise to future complications. The proper course,

undoubtedly, is the one corresponding to the inclination of the physician in charge. If we are all accustomed to the proper use of the curette, the future safety of the woman invariably would demand that the secundines be at once removed after the expulsion of the fœtus, in every case in which such removals can be made without force sufficient to injure the woman. But it must be remembered that in the hands of general practitioners unaccustomed to gynecological manouvers and aseptic measures the curette in the puerperal uterus will often prove a dangerous instrument. If this active treatment be adopted the after care will be very simple, for the lochial discharge will be very slight and involution of the uterus rapid. But whatever course we pursue until this involution is perfected, the woman should be confined to bed.

If it be found that the case is one of that class in which the physician himself, for the safety of the mother, finds it necessary to bring about the premature discharge of the contents of the pregnant uterus, to demonstrate absolutely the absence of criminal intent should be his first thought. It is of some importance to know whether we are dealing with a viable or a non-viable child in order that the proper method be employed. If the twenty-eighth week is approaching and it is possible to wait until the period of possible viability of the child arrives, such should be done, and this done, the induction should be postponed as long into the viable period as it is reasonable to venture, and thus compromise between the interests of mother and child, but always giving the mother the advantage of any doubt.

In bringing about the expulsion of the fœtus by artificial methods we should, as nearly as possible, imitate nature by securing clonic contractions of the uterus and the consequent evacuation of that organ. The process is a reflex act induced by the application of a stimulus, the impulse of which is sent along the peripheral nerves and causes the uterus to contract. This reflex act may be brought about in various ways, but many are unreliable, while others are complicated and unsafe. The reputation of emmenagogues in unsafe doses is largely based on erroneous diagnosis. The use of all drugs for this purpose is unscientific, unreliable, unsafe and indeed superfluous, as if the woman is pregnant, she will lose her life before the child is destroyed;

if she is not pregnant, they are unnecessary. Only the ignorant laity use them. The most reliable, safest and most generally employed method is that employed by Sir James Simpson, of introducing, under aseptic precautions, a soft rubber bougie into the uterus and retaining it there by a vaginal tampon until uterine contractions are excited sufficient to expel the ovum. The dangers are sepsis, inflammation and hemorrhage. The first two must be avoided by observing strict asepsis of the external genitals and vagina and of the hands of the operator. Should there be much hemorrhage, the placental site has probably been invaded and the bougie should be withdrawn and inserted in another direction. If after this the hemorrhage becomes alarming a firm vaginal tampon must be placed. This method, after the first few months of gestation, usually acts promptly and efficiently. If, however, the abortion is to be induced in the first eight or twelve weeks of pregnancy, cervical dilatation and thorough aseptic curettment is preferred.

If the abortion be found criminal the indications are to guard against sepsis and hemorrhage. It is imperative for the woman's future usefulness and well being that all cases be kept quiet in bed until complete involution of the uterus is certain. In interest of the profession and the common community as well, when even slight suspicion of criminal interference exists, the physician should exercise great care in examining his patient and make complete notes of any history he may obtain from the patient and others present, and also keep complete notes of his physical examination and the clots and portions of the embryo should be kept for inspection. If there is positive evidence of criminal abortion produced by a second party the case should at once be reported to the proper authorities, and all evidence possible should be placed at their disposal. In this way much can be done toward the prevention of criminal abortion.

A question worthy of serious discussion arises when a woman has committed abortion upon herself. Morally it seems right that the physician should report the case in the capacity of a citizen. But professionally it would be the part of reasonable policy, if not morally right, to save life if possible and to keep the offender secret; this as much in interest of future unfortunates as for the solution of the present dilemma, and, too, it seems

the surest means of discouraging the development of an increase in number of professional abortionists, who have neither the interest of the future community at heart nor the safety of the woman.

As to the propriety and demand for larger liberty in the induction of abortion in unfortunate young unmarried women the time has probably not arrived for its discussion, but it has been urged that there should be a recognized difference between abortion for convenience in the married and of an unfortunate single woman, whose shame would be agonizing to herself, her kinsmen and the branded child she bore. One plainly feels the need of this difference after turning away one of these unfortunates. But while each of us with a heart, with a sense of justice and with an active and right conscious keenly feel the need of this legal difference under similar circumstances, we must not persuade ourselves nor allow ourselves to be over-persuaded that induction of abortion, except for the life of the woman, is and must always be other than highly criminal against both morality and the most conservative law, and we must look for relief only in the establishment of some institution for the protection of both mother and offspring, and thus allow them both the opportunity of becoming useful citizens in the community.

GYNECOLOGY.

Chronic Endometritis, its Varieties, Pathology and Symptoms, With Special Reference to Treatment.

By B. RAY BROWNING, Littleton, N. C.

I DESIRE to express my appreciation of the honor conferred upon me as chairman of the section on gynecology to prepare a paper for your consideration at this meeting. In the selection of my subject I have not had in view the presentation of anything new or startling, but shall content myself in the short time at my disposal to touch upon some of the essential and interesting features of the subject chosen. Endometritis is an inflammation of the lining of the uterus. It is a disease of menstrual life, and while I have not observed it before puberty, yet it exists according to good authority, constituting the virginal form; it also extends beyond the menopause in the well-known form of senile endometritis. I shall content myself, however, with considering those varieties occurring during the child-bearing period. There are two distinct varieties of endometritis, viz.: (a) glandular, and (b) interstitial, with probably a third or uncertain variety, the fungoid or villous form. There is also a variety of endometritis occurring in the puerperal state, which, while it does not come distinctly within the scope of this paper, will be touched upon at a later period.

Without necessarily admitting the broad statement that all inflammatory processes are due to microbes as taught by Senn, Roy, and other surgical writers, it may be claimed that the position is strengthened by the investigations made to determine the pathogenesis of endometritis. It is a well established fact that in the healthy uterine cavity there are no microbes. Winter has proven this by examinations of a large number of uteri removed from the body.

Strauss and Doderlein have found the lochia in non febrile puerperal cases free from bacteria. It is a singular though won-

derful fact that the uterine cavity should remain free from germs when it has been shown by Winter, and many others, that in all or nearly all women the vaginal and cervical canal contain large numbers of microbes. The absence of uterine secretion, as suggested by some, may have some bearing upon this subject. It is quite important to remember that the microbes found in the vagina and cervix have usually lost most of their virulence. This is true of both the staphylococcus and streptococcus. The unbroken epithelial membrane of the endometrium is probably in no danger from them after they have undergone the changes produced by a residence in the vaginal and cervical canals, and the menstrual decidua, instead of forming a nidus, is also toxic to them. All cases of endometritis post-partum, or post-abortum, are probably of microbic origin. Endometritis originating in other conditions, as from the introduction of sounds and tents, specific vaginitis, etc., is probably due to the same cause.

Bacteriological investigations during the last few years tends to confirm this. The recent report of Brands, working in Slavjanskys clinic, who examined 25 cases of chronic Endometritis, and found bacteria in 22; streptococci were present in 2 cases; staphylococci in 7; gonococci in 3, and non-pathogenic bacteria in the other ten. Positive information as to the tissues inhabited by the bacteria, their mode of growth and the way in which they produce their pathological effects in chronic endometritis, has not yet been obtained. It is probable that the connective tissue spaces of the stroma are the chief habitats of the germs in all cases; their presence in the epithelial cells, on the surface of the mucous membrane and in the glands is not doubted. The epithelial layer, although consisting of only a single row of cells, is a protection to the underlying stroma. Brandt believes that the different forms of endometritis are caused by the different bacteria located in different habitats. Thus, in catarrhal endometritis, endometritis interstitialis, he finds short thick bacilli in the hemorrhagic extravasations. In septic endometritis, endometritis decidualis acuta, the dilated glands are filled with cocci; while in gonorrheal endometritis, the gonococci are in the epithelial cells. The microscopical examinations of different parts of the endometrium shows different result, not due to different disease, but different stages of the same disease. With

the acute variety of endometritis we have here little or nothing to do because it is so manifestly against the best interests of these cases to curette the uterus that laboratory studies have not extended in this direction. Suffice it to say that acute endometritis is characterized in the same way as any acute inflammation of other parts, by the presence of an inflammatory exudate. According to Keogh the inflammatory exudates consists of polymorpho-nuclear leucocytes, fibrin and serum accompanied with increased secretion of mucus. Red blood cells, escaped by diapedesis, may be present, but the presence of the leucocytes being our chief guide in diagnosis. In the first stage of chronic endometritis, there is an increase in the size of the glands; later there is also added an increase in their number. They branch out laterally, cork-screw shaped, and, if this hypertrophy and development of glands are carried to an extreme, we often find the whole mucous membrane consisting almost entirely of functionating glands with little interstitial tissue. Added to this there is hypertrophy of the glandular epithelium, as many as three or four layers lining the gland. Hemorrhages into the gland are also found. In the interior of the glands mucus is often found and there is almost constant swelling of the endothelial cells of the capillaries with dilatation of the veins. This is the glandular or hypertrophic, the first stage of chronic endometritis, the so-called endometritis glandularis of Ruge and Veit. Between this picture and that of the extreme interstitial stage there are many intermediate steps. The transition is a gradual one, requiring perhaps years for its completion. According to Weiner and Veit, the microscopical examination of uterine scrapings often show a glandular process side by side with an interstitial process. In this latter process the cells encroach more and more upon the glandular epithelium, even into the lumen of the gland, causing atrophy. The lumen of the gland becomes filled with connective tissue which in turn becomes irregular, shrinks and breaks down. Hemorrhages may now take place, but necessarily are circumscribed. According to Schroeder, the mucous membrane as such is entirely destroyed, the glands disappear and the stroma cells resemble decidual cells. In the specific form the glands are not increased in number, though most of them are dilated, the epithelium being found in several layers. Consid-

erable interstitial hemorrhage has been found, the capillaries dilated and increased in number. Wyder has pointed out that all attempts to demonstrate the gonococci in these old cases prove futile. The stroma cells are often swollen and proliferated while the glands are dilated and irregular in shape, their epithelium desquamated. The so-called fungous or papillary form of chronic endometritis is characterized by irregular papillary or villous outgrowths upon the surface of the endometrium.

In regard to septic or puerperal endometritis, there are two varieties, according to Bumm, of Wurzburg, and these he claims are demonstrated by both microscopical and bacteriological examination and clinical experience, the putrid and septic, either of which he claims may occur in a pure form. Septic endometritis is marked by the presence and development of septic germs upon the decidua. While streptococci are more frequently found, other varieties of bacteria may be present. In the putrid form the change in the decidua, according to Peterson, are produced by streptococcic micro-organisms, but no development of septic germs occur. The resulting decomposition gives rise to fever and other symptoms of intoxication. A very interesting fact historically in connection with these cases is that there is found beyond the necrosed decidua a zone of cellular infiltration which is a result of the reaction of the organism and acts as a barrier to the entrance of germs. The reason why one affection is local and another general can only be explained by the virulence of the septic germs present. Chronic catarrhal inflammation of the lining membrane of the uterine cavity in the married woman is a well known disease and has been described in text books for years as a cause of sterility, and as the result of certain injuries incurred during parturition, or of pathological conditions following that, originally, physiological function.

The causes of endometritis in the married nullipara are usually insidious and slow in their action, like catarrhal affections of other mucous membranes. Repeated exposures to cold, a general catarrhal tendency, prolonged and frequently recurring pelvic congestions, such as is produced by excessive sexual intercourse, especially if means for the prevention of conception are employed, these are factors combined with general anæmia which most commonly bring on a chronic endometritis. To these are added natural feeble constitution, scrofula and tuberculosis.

Symptoms: The first and most prominent is leucorrhea, the discharge being of a thick, viscid consistence, like boiled starch. The leucorrheal discharge is opaque when mucous crops abound, and yellowish when pus crops abound. The cervix is only slightly sensitive, and hence the disease may not be noticed by the patient for some time. Pain is more or less present in the back, groins and down the thigh and during coitus. It is most severe on left side and under the mammæ, neuralgic pains which leads to the supposition of liver disease. Menstruation may be normal, but is often increased in amount. Digestion is deranged, the nerve centres become unbalanced and the woman soon appears like an invalid. The sensitive and extensive nerve periphery which ends in the uterus is irritated and inflamed. Nerve reflexes induce excessive, deficient or especially disproportionate secretions and indigestion, constipation or diarrhœa follow. This is especially true of the glandular form, which at times of menstruation is very exhausting to the patient, from the increased discharges, blood and mucus. The interstitial variety of this disease is very prone to produce sterility, and early in its course dysmenorrhœa, with exfoliation of membrane, and later cessation of menstruation. This variety, according to Robinson, soon induces metritis, in which active deposits of connective tissue are the essential process and hence results a small, hard, stiff uterus capable of no function. There is often nausea, vomiting and flatulent distention of abdomen leading to pseudo-cyesis. Dark circles are seen around the eyes, headache, despondency and hysteria, the patient frequently crying at night. There is inability of the patient to concentrate the mind upon any one subject. These are some of the disorders of the nervous system. The existing sterility is often the only symptom which prompts the patient to consult a physician. The use of the sound in the uterus causes pain and a slight amount of blood escapes, hence after our diagnosis the sound should be used as little as possible. In case of long standing the mucous membrane becomes atrophied and the uterine cavity becomes lined with connective tissue. Hemorrhage is a very prominent symptom and uterine colic may come on from time to time. While leucorrhœa is a very prominent symptom in the glandular form, in the interstitial variety it may be observed at first from slight irritation, but it soon diminishes and may finally

cease altogether. The painful menstruation is due chiefly to the compression of the nerves by the distended vessels. The sterility is occasioned by the spermatozoa being killed by contact with the acrid discharge or the sensitiveness of the uterine mucosa causes an early expulsion of the fecundated ovum. In multipara with small os, the mucus plug may impede their entrance, though pregnancy may result.

The villous or fungoid form of endometritis is not a very frequent condition according to Mundé and Robinson. Its chief symptom hemorrhage. It bleeds at any and all times. Usually the vessels of the endometrium are enormously dilated, and the endometrium is so vascular that it resembles a fungoid growth.

Physical Signs.—Inspection at times reveals a red ring and the os externum soft and tender. At times the os is wide enough to admit the finger. In multipara lacerations often exist, notches and punctured cicatrices. Obstructed nabothian follicles often appear, and discharge presenting little nodules to the finger is seen through the speculum issuing from os-tincea. As a rule there is little tendency to spontaneous recovery as displacements often follow. A guarded prognosis should therefore be given according to extent of tissues involved.

Treatment.—This must be both constitutional and local. At times this affection is but a local manifestation of a general disease. The general health of patient must be looked after, the secretions and excretions. She must have and keep regular hours, have good, wholesome and nutritious food, pleasant company, exercise in the open air, warm baths, bowels regulated, trip to sea, and, in fact, everything that will promote her health. Ferruginous tonics when indicated.

Local Treatment.—To be efficient this must be thorough. The first course to pursue in preparing a patient for local treatment is absolute cleanliness. This is best secured by hot vaginal douches. Burtenshaw says that of all therapeutic measures that are brought to bear in the treatment of female pelvic diseases, there is probably no single one that is so abused, and the underlying principles of which so little understood, as that of hot water vaginal injections. Therefore they serve us a double purpose in the preparation of our patient for local treatment. Rationally and intelligently employed it is one of the most

remedial measures at our command; ignorantly used, it is often fraught with danger, and defeats every object in view. Plied with questions as to the technique of using hot water in vaginal injections most women will give correct answers except as to amount used, they seldom using more than a quart; one will confess that she has used a very much larger quantity, but has squatted over the douche pan instead of lying flat on her back when taking the injection; another has laid down, used a gallon or more at only a moderate temperature, and thus it goes. The intention has been of the best, the practice the worst. Certain rules should be printed for distribution by physicians among their patients requiring vaginal injections, but it is a notorious fact that many will tell you the trouble attendant thereon is too great.

1. A large size fountain syringe should be used, preferably one holding four quarts, attached to a support three or four feet above the body.

2. The patient should lie on her back with hips elevated and shoulders depressed.

3. At least two or three gallons of hot water should be used, the temperature of which should be from 110° to 120° Fah.

4. The injections should be taken twice a day except on two days preceding and two following the menstrual flow. The reason for assuming a strictly dorsal position with elevation of hips is sufficiently obvious, the hot water should bathe the parts thoroughly and constantly, a thing not easily accomplished in the upright position. Why should three gallons of water be used? For a very simple reason, and herein lies the secret of success. Wherever in the body there is an inflammatory process, an irritation, an increased amount of blood will be drawn to the parts, and wherever there is hyperæmia, there will be hyperplasia, if the process remains unchecked. The exceptionally free blood supply of the pelvic organs render them peculiarly liable to this evolution. The initial effect upon the tissues of water at a temperature of 110° to 120° Fah., is to dilate the blood vessels and thus to temporarily increase the already existing congestion; the secondary effect is to cause contraction and consequent lessening of congestion. It is the very effect that we wish to bring about in the treatment of pelvic inflammatory

conditions by the use of hot vaginal injections, and hence it is not only an agent of cleaning, but of distinct therapeutic property. This line of treatment must be continued for some time. We sometimes meet patients upon whom these douches have an exceedingly debilitating effect. Then the temperature or amount of water must be reduced. After taking these hot vaginal douches, the patient should rest quietly for an hour or two, shielded from draughts. Reclus of Paris claims, and with apparent good reason, that the use of hot water enemata in pelvic inflammation is much to be preferred to vaginal douches. He directs that the water be used at a temperature from 120° to 130° Fah., and that the patient must retain a large quantity for some minutes. Some little practice is necessary to accustom the patient to these enemata, the tendency to tenemus, being difficult to overcome.

We have now to consider the use of the curette in Chronic Endometritis as the next step in the local treatment.

In considering the use of the curette in this disease, it is not proposed to consider separately the different clinical varieties of endometritis, as all varieties of this disease whether development through the agency of pathogenic bacteria or due to circulatory disturbances of non-infectious origin are more or less amenable to treatment by the curette. The object of the curettage is the removal of the diseased endometrium. The utricular glands being increased in size or number the amputation of them at the muscularis secures better drainage. In the infectious cases the curettage places the uterus in a condition where the bacteria can be destroyed by the active leucocytosis produced by the operation. Martin, Thomas, Pozzi and others advocate the use of the dull curette, while Peterson and Bacon say that only by the use of the sharp curette can the complete removal of the glands down to the muscularis be accomplished. It is interestting to note the amount of actual tissue removed by ordinary curretting and the subsequent regenerative changes. Werth and Bossi found the amount to be very unequal, some parts being altogether untouched, the fundus and angles remaining intact. Bossi found the uterine mucosa in two cases completely regenerated in twenty-five to twenty-seven days. The best results seem to follow the use of the small-sized instruments which can

be more easily inserted into the cornua of the uterus and between the rugæ. Regeneration of the epithelium is delayed after the application of Liquor Ferri. "These observations" says Peterson "are especially valuable in connection with the treatment of gonorrheal endometritis, which has long been recognized as one of the most difficult to cure of all uterine diseases." This is supposed to be due to the deep penetration of the gonococci, they having been found by Madelenmer in the uterine muscular tissue and hence beyond the reach of the curette. Indeed Neisser himself says that once the infection has gained a foothold in the uterine mucosa there is scarcely any medical treatment of any service. Drainage seems to be all important in securing good results after curettage. Johnson says that in order to secure good drainage after amputation of the utricular glands, caustic applications must be omitted, as they tend to cap over and shut in the contents of the glands. This, however, does not coincide with Robinson who says he relies more on the acid and cautery than in curette, though this last author speaking of the glandular form of endometritis, recommends the use of a sharp steel curette after which an application of 95 per cent. carbolic acid is made to destroy the old adenoid endometrium. The application of the Pacquelin cautery is recommended as affording a fair chance of recovery. To be of service, the endometrium must be destroyed for a goodly distance. Some writers recommend the packing of gauze within the uterine cavity subsequent to curettage, but the opinion is that it does not act as an efficient intra-uterine drain, especially in septic endometrial diseases. The method employed by Gill Wylie is to dilate, thoroughly curette the uterus and apply tr. iodine or pure carbolic acid to the entire endometrium and put in a hard rubber stem. This latter keeps the cervix open and acts as a drain. "In the septic form of puerperal endometritis marked by the presence and predominating influence of streptococci and other pathogenic bacteria," says Peterson, "it is only where the disease is localized that it is amenable to treatment by the curette, and the sharp curette is especially to be deprecated." Bumm, of Wurzburg, in a paper read before the German Gynæcological Society expresses the belief that only in the early beginning of the infection could anything be expected from the disinfection of the endometrium, and where virulent

infection has taken place generally the curetting is usually too late.

Williams, Prior, Fry and Reynolds (*Therapeutic Gazette*, February, 1900), working together report as follows concerning the value of anti-streptococcic serum: "A study of the literature of the subject shows that 352 cases of puerperal infection have been treated by many observers with a mortality of 20.74 per cent. When the streptococci were positively demonstrated the mortality was thirty-three per cent. They show that without treatment such cases present a mortality of about five per cent., and that such cases tend to recover if nature's work is not undone by too energetic local treatment. They unhesitatingly condemn curettage and vaginal hysterectomy. Their experience is that anti-streptococcic serum is not injurious and may be tried if desired, but that its employment does not materially improve the general results of streptococcic puerperal infection. Where several methods are employed, as is usually done, it is difficult to say to which therapeutic measure the success is due. It is highly important first of all to ascertain the nature of the infection before injecting so potent a remedy. Noble, of Philadelphia, strongly advocates the local application of alcohol to the endometrium in cases of acute infection confined to the uterine cavity. This is done by means of a sterile rubber catheter and sterile gauze, a few drams of ninety-five per cent. alcohol being injected every half hour until improvement takes place. A number of of cases so treated responded very promptly and in all recovery ensued.

To those who believe that endometritis is a disease of microbic origin, the antiseptic treatment will appeal with peculiar force and has strong followers. Of these, Bacon is an able exponent. He advocates dilatation, antiseptic irrigation and drainage. When one considers the great difficulty in disinfecting the hands, so forcibly shown by Kelly of John Hopkins, he can imagine the uncertainty of rendering the surface of the less accessible membrane of the vagina and cervix aseptic. In order to do this, therefore, and to prepare the way for the successful employment of the curette and anti-septics to the diseased mucosa, it is necessary to observe certain rules in the introduction of the curette, sound or any other instrument into the uterus, lest we

unwittingly carry pathogenic bacteria within the cavity. Patients should be instructed to take sublimate douches in the manner already outlined, twice a day, for several days prior to an examination, which should never be made during the first visit. The external genitals and surrounding skin should be thoroughly cleansed and disinfected. This can be done by washing them with a solution of lysol and creolin and thoroughly scrubbing with a liquid soap. The cervical canal is to be treated in like manner in order to disinfect it and lastly an application of ninety-five per cent. alcohol is made to the entire surface thus treated. It goes without saying that no instrument should be introduced without seeing the open canal. "The curette," says Bacon, "is only a part of the treatment, for no one claims that by it alone can we render the uterine cavity aseptic. It simply paves the way for the antiseptic treatment. In this it differs from the caustic which has both a denuding and germicidal action." The success in the use of the antiseptic depends upon the ability to bring the agent into direct contact with the pathogenic germs. By removing the endometrium with the curette, or with caustics, one is enabled to apply antiseptics direct to them. When the curette is used carefully, and thoroughly followed by an efficient germicide I believe it is a more reasonable surgical procedure than the caustic. The outer portion of the endometrium, it is advised, should first be removed by the curette and the antiseptics applied in solution by the syringe or by means of an applicator or in solid form. Massage of the uterine cavity by means of an ordinary applicator swab, under antiseptic precautions, is said to stimulate the resisting and bacteriocidal properties of the tissues. Any measure which will improve the circulation, control the distended capillaries and arteries, empty the lymph channels and remove the exudations will also stimulate the antiseptic properties of nature. These agents, or measures, we apply to the diseased mucosa in the shape of slight stimulants, as iodine, massage, electricity, etc. Indeed, Schultz says that mild astringents or stimulants, like weak zinc chloride or iodine solution, are often harmful, because they serve as carriers of contagion, but when used with antiseptic precaution they may in suitable cases be of considerable benefit. By massage is not meant the Thure Brandt method, but stimulation of the cellular elements by mechanical irritation.

Electricity is another agent which must be considered an auxillary of nature in the treatment of endometritis. Of the use of this agent I cannot speak from personal experience. There are those, however, in whose hands it has produced marvelous results. It is said to be especially serviceable in those cases following abortion. A current of sufficient strength to have germicidal properties, is, I believe, too strong to be used in the uterine cavity. By virtue of its well known effect upon the circulation, the galvanic current is said to be a valuable agent in controlling the hemorrhage in cases of hemorrhagic endometritis. As an adjunct to the treatment already outlined I should mention the use of tampons of boro-glyceride. These tampons are pushed well back against the cervix and left in situ for eighteen to twenty-four hours after which they are removed and a hot vaginal injection is given to which is added equal parts of powdered alum and borax. These tampons act by virtue of capillary attractions depleting the tissues to a marked extent. In those cases of endrometritis accompanied by sub-involution, where the whole organ is large and heavy, these tampons have a very beneficial effect. If you have your patient under control the treatment of this condition is mostly favorable, otherwise very unsatisfactory. You will probably find no one method of treatment to be specific—neither the curette nor the caustic. There is good in all methods which meet the chief indication, which is the removal of the disease. It is by combined internal and local medication carried out along antiseptic lines, upon which our success will depend. You must study your patient as well as her disease.

MATERIA MEDICA AND THERAPEUTICS.

"Automatism."

By CHAS. ADRIEN JULIAN, Thomasville, N. C.

FOR more than a decade of years now the survival of influences that long ago became needful is a chance coincidence and very few pay homage to the old time religion in the rounding up of the nineteenth century. No other era has ever boasted nor comprehended such a productiveness of nostrums nor superannuated more remedies of true worth and value. Our prolific resources are universal. Who does not know the wonders of our Chemist's creation? The vision of tablets with little letters thereon to tell us what we are giving. The pill bedecked with ribbons and painted in gaudy colors, the bottles shaped in peculiar styles, labels printed with specific directions, vest pocket reference books with efficient combinations, these arrest the physician's step and charm his musing memory.

We can give no proper notion of the measureless play of the imagination of the thousands of medicine inventors.

Were I an artist, I should supplement this by illustrations with studies of the twentieth century evolution. I should present to you men distinguished by garments on which were embroidered various educational symbols bearing in their hands a cranioscope by which they could test the strength of their patients' character. "Absent treatment" would frequently cure, but where Flouroscope would reveal a plethoric purse, treatment face to face aided by the anointing of oil and the laying on of hands which had been previously magnetized by a magnetist-in-chief, would abrogate the disease and the contraction thereof never again be possible. Making colors and shapes are not sufficient; every tablet must be plainly marked; yea, even in plain English. The time was when Latin abbreviations could be understood, but for fear the mechanical M. D. should not realize what he is giving, for fear that his tablets should be placed in a wrong container, a symbol in plain English is

stamped indelibly marking its imprint through and through equal to that of "Pear's Soap." Some are placed in the different constellations. I have heard that new stars are constantly being discovered, scientic men are zealously laboring for the benefit of mankind and now more moons are found, and we must look heavenward for our therapeutic arrangement. When that moon is plucked alphabetical classification is advantageous as a refresher of the memory of the possessor.

The manufacturers are most painstaking and have succeeded in graphically describing in concise form how, when, and what. One's attention is quickly attracted by these methods, interest grows apace, he is unconsciously imbued with the feeling that he has the latest schism.

A general desire has sprung up among the members of our profession to do something new. I know that the seed of progress has blossomed and borne fruit, I know that better laws requisite to educational attainments have accomplished much, that the several states are trying to rid the general public of imposters, itinerants, mediums and quacks. The young practitioner of to-day is compelled to give years of hard preparatory investigation and made replete and capable. All this and more is true and should be, but simple things have been done with, old ideas relegated and new ones born and accepted in the same moment. I believe in the thing that has the power to out live its first impression and deepen as it gets riper, the good it did at first.

People are credulous and curious, learning has been traduced to the nauseous lore of the unreal. Common methods have ever been rejected for the intricate since Naaman, the Syrian, tried to refuse the advice of the prophet, to wash. He would rather place the stigma of divine disapproval upon himself than to resort to the ordinary methods of hygienic purification. We are disposed to seek ideas born in other brains rather than to arrange and analyze patiently waiting upon successful investigation and finding that recompense for which all labor is forever rewarded. By thus amusing ourselves with their tempting fruit, making knowledge a thing of mere sensation, moving and chattering, submitting our wants without question to the transcendent minds that furnish our supplies we frustrate the aims and teach-

ings of a noble profession. I, myself, have found it easier to follow the suggestions of others. My tastes for articles "made in Germany" became a mania like that of a "Dutch burgomaster for tulips," but the sins of ignorance have been expatiated by the acceptance of the synthetic compounds "made in America." Yet I would satirize the folly and duplicity of my brethren. Our literature of to-day is replete with loudly proclaimed discoveries; page by page of error is added by the enthusiast who is whirling with his ambition by the shortest route to immortality and the din of his chaos drowning "the still small voice of truth." Documentary Evidences mailed to each physician, investing him with the odyltic force which involuntarily aborts pneumonia, is another triumph of the twentieth century evolution.

It was Mesmer, who on discovering "animal magnetism" immediately bottled it, offered it for sale for the cure of all disease. In my wicked dreams I am enamored, I am entranced, my soul is driven like a leaf before the Autumn wind. The spirit of Mesmer stands before me, behold the apparition. The legerdemain of the year two thousand and ten is revealed and the defrauding trickster, the alchemist, is no longer sending us samples with instructions by mail, but by the faster method of aerial transmigration or etherization he pounces down upon us and exhibits his "Patent Mode of Education." Typhoid fever will have its Typhoidin, Malarial its Malarian, Pneumonia its Pneumococine, Consumption its Tuberculin, Tonsilitis its Quinsin and the Seven Years Itch its Scabiesen. The simple minded will endorse the "slate writing," and give their experiences of hasty practical application of the newly discovered remedies in disregard of all dangers attending such practice. But their names must be immortal, must live in the pages of the "Doctor's Factotum" and thus he becomes the automaton played upon by the irresistible suggestions of the operator.

I have tried to make prominent our subordination. I have tried in my very modest way to show my contemptuous disregard for the processes by which we are made machines without limitation, by deriding the servile manner in which we are made to prescribe.

I am prepared to admit the irrelevancies of this harangue but the obligation upon which I must insist is to know what we are prescribing and knowing dare to do it.

DISCUSSION.

Dr. H. M. Fletcher: I think this paper very timely and appropriate, and I think there is lots of food for thought in it. By the use of these remedies that have been brought around and forced on us not unwillingly, our knowledge of medicine and pharmacy is running to seed. We ought to look more to our medicines or we will forget how to write prescriptions. We are really using ourselves to advertise these medicines.

Should Physicians Supply the Medicines They Prescribe.

By DAVID S. MORRILL, Farmville, N. C.

There was a time when every physician supplied all the medicines he prescribed. But with the discovery of new remedies and the increasing demand on physicians for a more thorough investigation of diseased conditions, together with more palatable remedies than the already busy practitioner thought he had time to prepare, the pharmacist made his appearance. And for a time his advent was hailed with encouraging hope for his success, and ultimate establishment in an honored profession. A period then followed in which practically all physicians, except those living in remote districts, gradually commenced to put their bottles aside, and to place the whole responsibility of preparing and dispensing their remedies on the pharmacists. In those days the pharmacist was a man who attended solely to supplying medicines prescribed by a physician. For a time this new order of things worked well. The physicians were satisfied, and the profession of pharmacy seemed well established. While this method of medication relieved the busy practitioner of considerable work, and divided his responsibility, it was not so satisfactory to his patient, who preferred to have his medicine administered by the physician he had summoned, and who could not see the justice in having his suffering needlessly prolonged, while waiting for a pharmacist to prepare and send his medicine.

Naturally enough, on the part of the public, there was much opposition to this system, a system of unnecessary delay. And when they came to consider that instead of paying the doctor

$1.00 or $2.00, as the case might be, for his visit and medicines, as was the custom once, they now had to pay him the same amount for a strip of paper and the pharmacist .50c for the medince, with the additional annoyance of having to dispatch a messenger to have the prescription filled, people soon became impressed with the idea that for all minor ailments they would go direct to the pharmacist, and thus avoid the intervention of the physician. But here too they occasionally met with disappointment, for there were some pharmacists who would not counter-prescribe, and who were tireless in their efforts to explain the difference in the work of the physician and that of the pharmacist, endeavoring to show how they could not prescribe without going beyond their province, and beyond their teaching, and violating a social trust.

But, with the rapid increase in number of the Pharmacists, and competition, and a constant outpouring of patent nostrums, a great majority of the Pharmacists began business on a larger and more independent scale. They commenced to refill prescriptions without instruction, and counter-prescribing became a very important part of their work.

Finally, Physicians generally were aroused and began to think seriously, and, on realizing that when called to relieve the sick they were armed with no therapeutic agents other than those contained in a lead pencil and a pad of blanks, they soon realized their inefficiency, and absolute inability to administer directly to a sick person's wants.

This condition of things was the cause of a majority of the more practical medical men casting their old habits aside, and bringing into actual every day practice a more humane, reliable, and satisfactory method of medication. And the results have been so satisfactory to all, that now only a small per cent. cling to that fashion of making their patients a professional call with no remedies, or means to relieve suffering other than the pencil and pad of blanks and leaving behind him no consolation but rather a painful reflection on the uncertainty of the future and what it may bring, if anything.

There no longer remains a doubt in the minds of the majority of medical men that the tremendous outpouring of patent nostrums, and the readiness with which they are consumed by

public delusion, ingrafted in the mind by voluminous advertisements and countless testimonials, is extremely harmful to mankind. Not at all from a business standpoint of the physician, but from the fact of the unfortunate conversion of many acute diseases into a more exaggerated or even chronic character.

A person who feels a little dull and disinclined to go about his daily pursuits, reads in a newspaper an extensive essay, written presumably by a subject suffering in a similar manner. The writer pathetically, and even dramatically, describes his dull, frontal headache, his complete loss of appetite, an occasional flash of vertigo, a foul tongue, and a heavy feeling in the back. He goes on to state that after consulting several physicians, each of whom had failed to relieve him, but had expressed doubts as to his final recovery, he was at last, as a last resort, induced to try Regulator (it matters not here what Regulator), and after taking it for two days was very much relieved, and on draining a third bottle was entirely restored and able to perform his usual work.

And there is the needless suffering to which young children are subjected, by the reckless use by parents and nurses of mixtures of unknown power for doing harm, containing agents of which they know nothing, and suggested by some person of utter ignorance of the fitness of medicinal remedies. A few months ago my attention was called to an infant, who having had some symptoms of malaria, had been drenched with a teaspoonful of Grove's Chill Tonic every three hours for several days. And we, who are familiar with the harshness of that preparation, can imagine the expression of bodily suffering manifested by that unfortunate victim.

With the physician supplying the required medicines a great deal in the way of expense, and much more in the way of ease and comfort is saved the patient. Their system, of course, gives the doctor more work, and enforces upon him a greater expenditure for drugs and general supplies, thereby subjecting him to more chance for loss by fraudulent patients.

But even all this should not be considered any serious obstacle in the way of the Physician supplying directly and personally to his patient the remedy best calculated to meet the requirements of the case. When people find that they can go to the

doctor and get the desired remedy, without being subjected to the annoying delay and additional expense coincident with the intervention of the Pharmacist, they will naturally have a tendency to refrain from seeking the grocery, or the general merchandise store, to find the desired medicinal remedy. The Physicians of this country are better off that the nostrum makers live, but the consumers would be better off if they were all dead. The medical man of the present day who cannot easily, pleasantly, and quickly, supply to his patient any medicine required, is surely behind the times.

It has been argued from time to time that carrying medicinal agents and the manipulation necessary in the preparation of powders and the like for administration, interfered with the dignified bearing a Physician should maintain; but it seems to me that a true Physician should be so devoted to the art of supplying remedies to relieve suffering as to be willing to subordinate all other things to that.

DISCUSSION.

Dr. Chas. J. O'Hagan: Dr. Morrill has written a very good paper and it is packed full of good sound sense, but he cheated us in the very slipshod way in which he delivered it. Doubtless however, it will read better than he read it. I believe the moral of it is that it would be a great deal better for the medical men to stick to the old practice instead of buying synthetic compounds. The physician gets into a careless habit which demoralizes his mind. I hope Dr. Morrill's paper will call your attention to the deleterious effect of these compounds.

PRACTICE OF MEDICINE.

Haematuria.

By CHAS. M. HAZEN, Professor of Physiology, Medical College of Virginia.

We can hardly overestimate the importance in any pathological condition, supposed or real, of the chemical and microscopical examination of the urinary discharge. We ought to know the quantity, specific gravity, percentage of normal constituents such as urea, urates, phosphates, chlorides, and the presence and amount of abnormal materials such as leucin, tyrosin, and those indicated by such terms as *albu minriau, glycosuria, oxaluria, chyluria, hematuria.*

The presence of abnormal coloring matter in the urine is calculated to attract the attention of both layman and physician; to be able to point out the source and clinical significance of such unusual appearances is of the utmost importance. The stain of methylene blue or the yellow from the administration of santonin are quite enough to terrify the uneducated patient; while the dark amber or blood-red urine may test to the utmost the diagnostic skill of the learned scientist to trace to its source perhaps, some simple and comparatively innocent condition of disordered digestion or torpid liver, or malignant disease of some portion of the urinary tract.

Hematuria, or the discharge of blood by the urine, is a condition which is in many cases easily and definitely recognized by the naked eye. The evidence from its macroscopic appearance can be confirmed by testing for hæmic coloring matter with ozone and guaiacum; or by Heller's method by heat and alkalies, precipitating the phosphates, which are colored red by the hæmatin. The presence of albumin when other sources of albumin can be eliminated will prove the existence of blood; or if there is much excess of albumin over the hemoglobin, it may be concluded that there is kidney disease and that the diseased kidney is the source of the blood as well as of the albumin. These

tests will be sufficient to prove the presence of hæmic coloring matter, even if the color is faint and uncertain. It is necessary to note also whether the blood comes before, with, or after the urine; likewise whether it is bright from recent bleeding, or the coffee color of retained hemorrhage. In some cases clots, larger or smaller, in lumps or cylindrical, will indicate by shape and size where they are formed, as perhaps in the ureter; and these clots may stop the discharge of blood and even of urine for a time. Palpation of kidney, and of ureter and bladder (external or through rectum or vagina) may detect tumors or tenderness; and instrumental examination of the interior of the bladder by sound or cystoscope may discover at once the cause in a stone or morbid growth; or the brilliant experiment of Kelly may be imitated, of catheterizing the ureters and demonstrating from which ureter the blood comes. It ought, however, to be distinctly noted that in a condition where the cause and locality is positively unknown we run great risk by instrumentation of the vesical interior; because it is possible thus to greatly aggravate nervous symptoms and in some vesical tumors the gentlest manipulation may bring on severe and even fatal hemorrhage.

With the microscope we search as usual for characteristic crystals, for mucus, pus, casts, epithelium, and shreds from morbid growth, and especially in these cases for blood corpuscles.

There are cases of hematuria where no corpuscles are found; this may be due to the disintegration of these elements by an alkaline urine; or the hematuria may be more strictly speaking *hemiglobinuria* or a *hematinuria*. These cases ought probably to be classed separately as they arise from conditions quite different from those that ordinarily cause hematuria. In order to appreciate this we need to glance over the physiology of the blood-forming and blood-destroying organs; and to recall those pathological conditions in which homoglobin figures as a morbid product and in which the organs referred to are especially involved.

The blood is composed of the fluid portion or plasma, and of the red and white corpuscles. The red corpuscles are made up of the stroma and the contained hemoglobin. The hemoglobin is the oxygen carrier for the body; taking it up in the lungs, it enters into combination with it as oxygen hemoglobin and is

again disassociated from it in the tissues. The red corpuscles are formed chiefly in the red marrow of bone and have a life history of three or four weeks. Their death takes place in the spleen and liver, and perhaps elsewhere. The complete metabolism of the red blood corpuscles is not thoroughly understood; it is built up like other tissues from elements furnished by the blood; its katabolism, or breaking down, consists first in the separation of the hemoglobin and stroma. The proteids, of the stroma, like all preteids, are oxidized into leucin, guanin, tyrosin, &c., and perhaps later to urea or uric acid. The homoglobin is divided into hematin and globin. The globin goes on like the stroma to urea and uric acid. The hematin gives off its iron (that precious metal, so carefully preserved by the body, and used over and over again); the rest of the hematin, known as hemato-porphyrin, becomes by hydration bilirubin, or "bile-red," the principally coloring matter of the bile; from it the other bile pigments are formed, biliverdin and bilifuscin. Confirming this view of corpuscular metabolism are the facts that no iron is found in the bile-pigments, but liver-cells are rich in iron.

We notice as the next physiological step the very interesting one that bilirubin becomes urobilins, which is the normal coloring matter of the urine. Prof. Maly calls urobilin *hydrobilirubin*, and has shown that it is by the simple addition of water (as this name implies) that bilirubin becomes urobilin. Harley and Scherer calls it *uro-hematin*, thus pointing out the ultimate connection between urinary pigment and the blood. Now this normal physiological process from hemoglobin to urobilin is analogous to the pathological facts under discussion; as that we might almost expect that, since normal blood products are in health excreted by the urine, so in diseased conditions the pathological blood waste will be thrown off in the same manner.

The diseases of which hemoglobinuria is a symptom are those in which there is some blood dycrasia, such as infectious fevers, purpura, scurvy, malaria. The course of these diseases may be of such intense character as to cause the mucous membrane of the urinary tract to allow the extravation of blood, just as frequently happens to the mucous membrane of the nose; so that they may be regarded as at least a rare cause of hematuria. But more usually (especially in malaria) injury to the red blood

corpuscles, causes a greatly increased discharge of homoglobin. It is the toxins and in some cases the germs that produce these effects. All kinds of tissue; are involved. But the especial organ of metabolism, the liver, suffers in addition to its own burden from the abnormal character of the blood with which it has to deal. The result to the liver and spleen is seen in their congestion and enlargement and in the altered state of the blood and secretions proceeding from them. Acute hyperemia, cirrhosis, accompanying digestive disturbances, hematogenous jaundice, uric acid effects, all point towards the liver as the organ that suffers from the diseases in question; and the lines of treatment ordinarily employed with success are partly directed to this as the department to be relieved and sustained until the elimination of the poison and the cessation of the disease.

On the basis of the above discussion of the nature of hematuria and hemoglobinuria we are prepared to classify more exactly the conditions ordinarily known as hematuria, and to glance at their logical treatment. Let us first differentiate between

(a) Hematuria due to conditions lying within the urinary tract;

(b) Hematuria, including hemoglobinuria, due to conditions outside the urinary tract.

Under (a) we may note

(1) Trumatism to urethra, prostrate gland, bladder, ureters, pelvis or substance of kidney;

(2) Injury to the mucous membrance by parasites, such as *Bilharzia Hermatobia or Filaria sanguinis hominis.*

(3) The effect of certain drugs, as cantharides, turpentine; and of cerrtain articles of diet, as asparagus, strawberries;

(4) Disease: urethritis, prostatitis, cystitis, ureteral or renal inflammation;

(5) Stone in bladder or kidney;

(6) Morbid growths, benign or malignant; urethral polypus; syphiloma; tubercle.

(7) Congestion from cardiac disease.

In the second class are the hematurias and hemoglobinurias due to

(a) Secondary degeneration from tuberculosis, syphilis;

(b) Dyscrasia and cachexia due to cancer of other organs;

(c) Dyscrasia and cachexia due to purpura, scurvy, malaria.

The treatment of the second class will be directed toward the underlying constitional condition.

The treatment of the first class will be to remove the local cause.

In addition to any general therapy it may be necessary, for if for no other reason than to allay the patient's fears, to treat the main symptom. We may prescribe

1. Absolute rest in bed.

2. Cold, applied as near as possible to the bleeding surface; e. g., a piece of ice per rectum if the base of the bladder is involved.

3. Gentle attention to the bowels, to keep them soluble; salines, oil, enemata.

4. Diet; a moderate amount of cold water, soft food and and such as will not clog the digestive system.

5. Drugs; sedatives, as potassium bromide, cannabis indica, opium; motor excitants, as ergot, nux vomica (I have seen ergot aggravate symptoms and strychnine in the same case relieve them); astringents, witch-hazel, lead acetate, alum, gallic acid, sulphuric acid; turpentine is generally useful; tincture of the chloride of iron; tincture of guaiacum; calcium chloride to increase coagulability.

Vesical bleeding may require astringent injections. Sometimes clots may have to be removed from the bladder. In some cases the bleeding should be allowed to continue, as a safety-valve in cardiac disease, or a relief to pain in malignant tumors.

This interesting condition which we know as *hematuria* is, of course, only a symptom. But it is worthy of discussion because it frequently rises to considerable dignity on account either of difficulty of diagnosis or treatment, or because of the unfavorable prognosis rendered necessary by the grave conditions which constitute its etiology.

Chronic Cystitis.

By J. H. MARSH, Fayetteville, N. C.

Complete and exhaustive discourses on the cause, symptoms, pathology and treatment of chronic inflammation of the urinary bladder are found in the standard works of surgery, and it is not the object of this writer to go into a lengthy discussion of established scientific facts, but if by refreshing the minds of the profession with some of the more important causes and pathological conditions met with in this disease and the practical use of the therapeutic agents at our command for curing or alleviating this class of suffering humanity, a free and full discussion of this important subject is elicited from this society, the object of this paper will have been accomplished.

Chronic cystitis, or cystorrhœa, is an inordinate secretion of white, glairy mucus, essentially dependent upon chronic inflammation of the lining membrane of the organ. It is analogous in its character to gleet, leuchorrœa and kindred affections, and is merely a symptom of a more serious disease. It is most common in elderly subjects and is nearly always due to some obstacle to the evacuation of the urine, as stricture of the urethra, vesical calculus, enlarged prostate gland, paralysis of the bladder, sepsis, etc. It is a constant attendant upon sacculation, ulceration, hypertrophy and morbid growths of the organ. Once established it is easily aggravated, or reinduced by exposure to cold, excesses in diet, irritating injections, diuretics, over distention of the bladder, neuralgia, retrocession of gout, repulsion of cutaneous eruptions, local injury, and diseases of the adjoing parts, as the anus, rectum, vagina and uterus.

The disease generally comes on in a slow, gradual and insidious manner, the inflammation which accompanies it, which is always the immediate cause of the peculiar discharge, is always of a chronic character. The characteristic symptoms are an inordinate secretion of mucus, and altered condition of urine, frequent and difficult micturition, pain in the region of the affected organ as well as in the adjoining parts, and more or less constitutional derangement. The quantity of mucus mixed with the urine varies considerably in different cases and in differ-

ent conditions. In mild cases and in the incipiency it is usually very small. At a more advanced period it is sometimes enormous, constituting as much as four-fifths of the entire volume. The secretion is usually very thick, ropy and viscid, and after standing sometime it adheres to the bottom of the receiver. During the progress of the disease the urine becomes highly acrid, so that the bladder can hardly tolerate its presence, even for a few minutes. It generally emits an ammoniacal odor, is of a dirty, turbid or blackish color; is rapidly decomposed, and is nearly always mixed with epithelial, fibrinous, purulent and phosphatic matter. Renal casts are nearly always present, when it is accompanied with serious involvement of the kidneys. Pus may proceed from various sources as the bladder, uterus, prostate gland, or even the kidneys, which are often sadly involved in the mischief. Its presence is always regarded with great attention, as it indicates serious disease of the organs from which it proceeds. The discharge which accompanies this disorder may be mistaken for semen, or mixed with semen, when this flows back in the bladder and mixes with the urine, as in stricture or enlargement of the postate gland. If any doubt exists this can readily be solved by the microscope.

The prognosis varies with many circumstances as the cause, duration of the disease, the age and constitution of the patient, etc. In its incipient stage it is sometimes not difficult to cure, but when it has come to disorder the whole system, the prognosis is more unfavorable. Sometimes the walls of the bladder are ulcerated and thickened to five or ten times their natural thickness, and the kidneys, ureters, and prostate gland are implicated to a fatal extent.

In the treatment of this affection it is of the greatest importance to ascertain the nature of the exciting cause. Stricture of the uretha must be removed, stone in the bladder extracted, hypertrophy of the prostate gland, and diseases of the neighboring or associated organs mitigated, before any reasonable hope can be indulged of a permanent cure.

The patient should be put to bed and kept perfectly quiet and a general antiphlogistic course of treatment instituted, even if there be no marked constitutional disturbance. The bowels should be opened with saline cathartic, enemas, and if the secre-

tions are disordered, with calomel and jalap. All medicines tending to irritate the rectum, such as aloes, etc., should be avoided. The most perfect quietude, both of body and mind, should be enjoined. The diet should be light and bland consisting largely of milk. The emulcent drinks should be freely given. General local bleeding is highly recommended in plethoric subjects. Warm baths and hot fomentations are very useful. When by these means the violence of the disease has been subdued, then comes the long list of internal remedies, such as balsam copaiba, buchu, uva-ursi and the terebinthinate preparations. In acid conditions of the urine an alkaline treatment is always indicated; while in alkaline states of the urine acids are to be given. Opiates, hyoscyamus, etc., are indicated for the relief of pain. In gouty and rheumatic subjects colchicum and the iodides are extoled, and iron for anæmia. Benzoic acid has been recommended as sometimes affording relief when everything else fails. Salol has been used a great deal within the last ten years as an antiseptic and with good results in many cases. These agents, with many others, have been used by the profession with more or less success, and all have their advantages in certain cases. I do not wish to detract from the virtues of any of the time-honored remedies which have held their place for so long a time as standard therapeutic agencies for this dread disease, but I ask a discriminate use of them when only they relieve, and not the blind and mechanical use of any class of remedies in all cases of this disease as is the custom at present with so many members of the profession.

I wish further to call your attention to the local treatment of this affection, and to emphasize its importance, and to insist on its more general use by the profession at large as the most rational, and, I believe, scientific treatment for chronic cystitis, and the only treatment that will give satisfactory results in the great majority of cases. Irrigation of the bladder should always be done under the most absolute antiseptic precaution, and no air allowed to enter the organ. And at the same time attention should be paid to the general health as above indicated. The frequent irrigation of the bladder, which can always be accomplished, if carefully used, with a soft rubber catheter and an ordinary syringe with boiled water or antiseptic solution com-

posed of nitrate of silver ½ to 2 per cent., or stronger; permanganate of potassium ½ to 4 per cent.; boric acid 2 to 10 per cent.; creolin from 1 to 5 per cent.; corrosive sublimate 1 to 20,000 to 1 to 5,000; carbolic acid 1 to 500 to 1 to 250, and many others belonging to the same class of antiseptics. The effects of silver injections are sometimes marvelous, though somewhat painful if used in strong solution. While carbolic acid makes a very soothing and pleasant wash in a number of cases where other remedies produce irritation. In cases which fail to yield to these methods of treatment and in which urination and painful tenesmus are prominent symptoms and are accompanied by a gradual failure of the general health, a perineal cystotomy followed by permanent drainage, will often be required and give marked relief and occasionally result in an entire cure. The importance of a systematic course of treatment in every case should be carefully observed, and if given a thorough trial it will take its place as the first and most important means of relieving this class of suffering humanity. To illustrate I will report one of the worst of a number of cases that have come under my care within the last few years. Mr. F., age 59, when a boy received a traumatic stricture from a fall a straddle the sleeper of a house, from the effects of which he suffered several years. After this time he got along very well until fourteen years ago, when the cystitis set up again, and with the best of medical treatment he grew worse until the fall of 1887, when an external urethrotomy was performed by Prof. S. W. Gross, he being unable to pass a filiform bougie at the time he operated. Patient got along very nicely for several years by passing a No. 16 or 17 bougie once a week, but suffered more or less from spasm in urinating most of the time. He began at this time to suffer again, with the inflammation, for which a thorough course of internal treatment was given, consisting of balsam copaiba, buchu, etc., which was kept up until two years ago, when he came under my care. At this time the discharge was almost entirely composed of mucus, etc., and he could not retain his urine more than five to ten minutes at a time, and had no control of his bowells at all, unless under the influence of an opiate. At this time he presented all the local symptoms of a very bad chronic cystitis, without fever or other marked constitutional symptoms.

In addition to constitutional treatment I began to irrigate the bladder with silver solution, grains 1 to 2 to the ounce twice a week, and in the meantime used warmed boric acid irrigations night and morning regular. Under this treatment he began steadily to improve, and within several weeks he was able to attend to his business. With an occasional irrigation he kept up until last fall. At this time hs had a return of all his local symptoms with marked constitutional disturbances in addition. He presented every appearance of suffering from septic poison. His condition in every respect was much more serious than it had ever been before. And he had given up all hopes of getting up again. At this time I brought him to the hospital and began a systematic course of local treatment in addition to his constitutional treatment. His bladder was so irritable that the silver solution could not be tolerated in any strength, and the carbolic acid solution 1 to 500 was used regularly night and morning. His urine was drawn every three or four hours. At the end of two weeks under this treatment, his fever, which had ranged from 103 to 104 prior to this time, was reduced to normal and remained so throughout his illness, with one or two exceptions, when he had a slight return for a day or two. At this time the capacity of his bladder had increased from one ounce to several and his urine had to be drawn only two or three times in twenty-four hours, and his general health was improving satisfactorily. He remained with us several weeks, during which time local irrigation of the bladder was regularly kept up night and morning with carbolic solution from 1 to 500 to 1 to 250. His general health improved very rapidly, and he returned home about the first of last December; since that time, with an occasional irrigation kept up by himself, he has been attending to his business, and writes me that while not well his general condition is better than it has been for several years. While this man is not well, and never will be, I venture the assertion that he would not be alive to-day but for the local irrigation in the treatment of his chronic cystitis.

DISCUSSION.

Dr. R. H. Lewis: I would like to call the attention of the profession to the water of the Red Sulphur Springs in West Vir-

ginia. I have come to have great faith in the water and regard it as an uncommon agent in the treatment of all chronic diseases of the mucous membrane, such as diarrhea, cystitis, chronic bronchitis, etc.

Dr. J. C. Rodman: I desire to thank Dr. Marsh for his interesting paper. This is a disease of a great deal of importance to us all and I desire to say a few words as to causation.

In many cases of chronic cystitis the physician himself is at fault in the treatment of stricture, especially stricture of gonorrheal origin. I think we are not careful enough in the treatment of stricture as to irrigation and as to the sterilization of our sounds. In the hurry of office practice where we have to pass a sound once in three or four days a man may come to us and we simply pass the sound through an alcohol flame or gas jet and push in the bladder and oftentimes we ourselves are responsible for the gradual development of chronic cystitis and I wish to say a few words that we may prevent cystitis in our patients by thorough irrigation of the uretha and oftentimes of the bladder, and by sterilization of our sounds.

Dr. O'Hagan: I was in hopes that Dr. Marsh's paper would have a little more discussion in view of the fact that cystitis is a very common and also troublesome disease. I was glad to see Dr. Rodman calling attention to the fact that cystitis is often due to the carelessness of doctors. That vicious little microbe, the gonococcus, is more productive of cystitis than anything I know of and the surgical treatment adopted for the cure of gonorrhea is such as to extend the gonococcus to the bladder. And again, the clumsy treatment of that disease often leaves a stricture. Everything Dr. Rodman has said about sterilization is of very great importance and as to the treatment, I agree with Dr. Marsh, that local treatment is absolutely essential and in most cases is the only remedy we have for it. Overdrugging in various ways makes this disease worse, and if the patient suffers from stricture in the pendulous urethra this must be overcome. The fewer drugs the unhappy patient takes the better off he is, and I believe pure water and plenty of it is one of the best things he can take, flushing out the kidneys and the bladder. The modern improvements in all the instruments connected with the treatment of genito urinary diseases enable one to accomplish much

more by irrigation than he formerly could, and then disinfection and so on comes in and the vast number of disinfectants is such an embarrassment of riches as it were that we are at loss to know which to choose. Local treatment and plenty of water will produce better results than anything else. Sometimes, though, there are growths inside the bladder which necessitates surgical interference and sometimes perhaps the presence of calculus would cause all these things, all of which must be attended to before we can pay attention to the bladder. I have given these few words in discussion of this subject inasmuch as it is a very common disease, and will be glad to hear the men of the profession express themselves as to their treatment and their diagnosis and the etiology of the disease. The etiology, I think, is largely due to the gonococcus.

Dr. M. H. Fletcher: I think I have seen more cases of cystitis due to dirty catheters than almost anything else; especially as the doctor says in his paper, if you let air into the bladder. I have seen often, through carelessness of the doctor or carelessness of the nurse, cystitis set up. It takes a great deal of care and a great deal of sterilization and the simple fact that you have to pass the catheter itself is going to cause trouble if it is continued any length of time. Large doses of boracic acid is one of the best remedies in the treatment of the disease.

Dr. W. C. Galloway: It may not be entirely out of place for me to say a few words upon this topic. I will cite two cases that came under my own observation when I was in general practice. One when a resident at Snow Hill, and I desire to allude more particularly to the female urethra. In this particular instance it was a lady who was emaciated to 110 pounds after having weighed 160. I saw the lady, examined her, and at that time I had been reading up on the Moore Madden plan of dilating the urethra. Moore Madden said at that time from one to two operations, as a rule, were sufficient. In that case I had to stretch the urethra 4 times, but with the best results. It was done under chloroform, with no one to assist me, and when I got through she said I was the meanest man she ever saw, and I reckon I was, but she was not completely under the chloroform, but she got well after the stretching, with some boracic acid and the flushing of the kidneys, and with a little anodyne to relieve

her; and in the course of 6 months the lady was perfectly well, weighing at that time 160 pounds. I was in Winston once when Dr. Bahnson came to me and said, come with me to the hospital and administer chloroform to a patient; I want to perform a supra pubic operation. I said, of course, but I have an instrument which I believe will obviate your supra pubic operation. I brought out the bi-valve instrument—I think a tri-valve is better—and showed it to the doctor and explained my manner of procedure which he deemed a good thing and concluded to try it. I gave the chloroform and he used the instrument with the most successful results.

Dr. C. J. O'Hagan: Dilatation of the female urethra is the commonest thing in the world inasmuch as cystitis in the female is ten times more common than in the male. Dilatation does not always cure by any means, but always gives relief. There are a thousand ways in which you can perform that operation. You can use a cone-shaped tube, metallic or made of vulcanized rubber, introduced into the urethra. I hardly ever anesthetize. It gives you time to look in and see if there are any structural changes in the bladder. It is very simple, and almost everybody does it. It is more than 50 years since it was first mentioned, it is almost ancient history. In nearly all cases it will give relief and will give room to operate. Sometimes the cystitis in females is so terribly intractable that nothing will relieve. Dr. Wylie, of New York, has frequently perforated the bladder with advantage making an opening into the vagina, to give the bladder a physiological rest, when the condition of the urine was such as to cause fermentation. This is an interesting disease and I will be glad for you gentlemen to discuss it further.

Dr. Holmes: In discussing the local irrigation treatment of cystitis I would like to ask if there is any gentleman present who has used a combination of aristol with europhen in liquid petroleum, and if they have I would like to know what their results were.

Dr. H. H. Dodson: Of course we all realize the fact that local treatment is the most satisfactory in chronic cystitis, but in the case of women there is a therapeutic remedy. I have gotten better results from the use of creosote than anything else. In treating tubercular cases where there was any trouble of that

sort I have found invariably some improvement on the use of creosote, and therefore I was led to use it in the treatment of ordinary cases, in doses of from 5 to 15 drops 3 to 4 times a day.

Dr. J. F. Sanderford: I wish to voice brother Fletcher's remarks and add my testimony to his. I have gotten the best results from the internal administration of boracic acid and I have found the etiological cause in my practice to be an unclean catheter in the hands of the nurse or of the patients themselves. I have some cases on hand now due to those causes. For internal remedies boracic acid has stood me a good hand.

Dr. R. A. Whitaker: I had a case of cystitis that reminds me very much of what Dr. Galloway calls your attention to. She was very much run down and had been suffering a long time and was confined to the bed, could not be on her feet at all. I was called to see her, but made only one visit at the time. She had been told she would have to have an operation as she was troubled with some malignant growth and I made a thorough examination and diagnosed the case. I dilated the urethra and put her on this treatment. In cystitis it has given me better results than anything else; boracic acid and benzoic acid, ʒiss of boracic and ʒi. of benzoic, in 6 oz solution, tablespoonful every three hours. You will find that the alkalinity of the urine will disappear and become normal, acid reaction; and in this case I think a couple of bottles improved that woman's condition and she has never been troubled with it since, and is now a stout woman. At the time she thought she had to die. I have used this prescription in a great many cases, especially in women.

Dr. H. T. Bass.—I have enjoyed Dr. Marsh's paper and I have enjoyed the remarks made by the different gentlemen, but it strikes me that none have paid enough attention to the dietary treatment. I had had some sad experience in cystitis some time ago, but it was in the female. I used irrigation and think that is one of the best remedies we have, but it is very important that the irrigation be properly applied. Most of us give irrigation with two much force to the sensitive bladder. Dr. Marsh speaks of patient's bladder not bearing the smallest per cent. of nitrate of silver. I used the ordinary rubber catheter and put in as much water as the patient could bear, using very small stream. I first used normal salt solution and washed the blad-

der thoroughly and commenced with 2 per cent. of nitrate of silver and went to 10 per cent. before the patient was relieved. I examined the urine every day and it was always alkaline and full of mucus until I got to 10 per cent. of solution of silver nitrate. Of course I put in as much as the patient could bear. I put my patient absolutely on milk diet, poor milk, but not skim milk—hotel milk. She was given treatment something like a month. I think nitrate of silver the best remedy for a mucous surface. The late Dr. Pepper, of Philadelphia, recommended it in all mucous disturbances, and I not think we can improve with aristol and boracic acid and benzoic acid or any of the other remedies. Of course if urine is acid I agree with Dr. Lewis' experience and I had some patients benefitted. Where you have cystitis with pus formation you are apt to have alkaline reaction. But the diet is particularly important. Meat will not do, oil will not do, but an absolute milk diet. I had a case which bothered me a good deal. Some of my friends advised her to take Warner's Safe Kidney cure. She said she would not do it unless I said so. I came back to Tarboro and took a bottle and read the label. I told her if she would go by the diet list she might take the medicine. She took it three days and said she would starve to death, so she quit Warner's Safe Kidney Cure and quit me, and I do not know what became of her.

Dr. S. W. Battle.—Before closing the discussion of cystitis I would like to suggest a plan of irrigating the male bladder which has served me well. A simple fountain syringe adjusting the nozzle, without entering the bladder at all, just elevate the bag enough and you will find that the water will go into the the bladder without any irritation of the deeper portions of the urethra at all. I have found this in two or three instances a successful way of irrigation, and if you elevate enough, unless there is stricture, you will find that the water will find its way into the bladder.

Dr. J. C. Walton.—There is one point they have not alluded to and that is rest, absolute rest, so as to give the injured organ as much time as possible to recover. An internal antiseptic I use oil of winter green and salol, one part of oil of winter-green and two of salol, 15 to 20 drops three times a day. As a local treatment I have never found anything better than boracic acid.

I endorse Dr. Lewis' statement as to the value of the Red Sulphur Springs in catarrhal conditions.

Dr. H. T. Bass.—I have used oil of sandalwood and I recollect one patient that did not get any benefit until he took 40 drops three times a day.

Dr. Everett.—I have sometimes in the dilatation of the female bladder given cocaine which is very good, and then the application of silver nitrate. The male bladder will be irrigated with increasing pressure, each time.

Dr. J. B. Marsh.—I wish to thank the gentlemen, and in reply to Dr. Holmes' question in regard to the use of aristol and europhen, by saying I have had no experience with them at all.

BACTERIOLOGY AND MICROSCOPY.

Symposium on the Biology, Pathology and Treatment of Tuberculosis.

By PAUL PAQUIN, Asheville, N. C.

TUBERCULOSIS depends on three factors:

1st. Predisposition of a complex physical nature.

2nd. General and special feebleness and deterioration of the tissues in the system or some given organ or sets of organs by which the natural cellular activities and vital forces are more or less depressed.

3rd. The destructive action of the bacillus of tuberculosis and the complicating germs by their presence and their biologic and chemic actions.

It stands to reason then, that with such a complicated pathology as must result from this combination of bases and causes, the physician needs to study each tuberculous patient closely to decipher the kind and nature of involvement present, and to realize the extent and sort of lesions existing. In this field, and with the view of inducing a conception for the proper kinds of remedial measures in given cases of pulmonary tuberculosis, the writer has carried on some bacteriological investigations and made numerous observations in the last ten years. As his paper contemplates only the explanation of mixed infections as a basis for proper remedies, I will be brief.

In the first place, I divide my tuberculosis patients as to the origin of the disease into two classes:

(a) Those born of tuberculous parents—usually slow types with comparative low fever. These present usually feeble, spare, emaciated, bony, slim physiques.

(b) The purely accidental class, among which we find a majority having had a more or less robust constitution.

Then I sub-divided these into five classes, to-wit:

(c) The cases in which the expectoration is slight or almost nil, and in which the secretion and excretion contains various matters, chiefly mucous, some with grayish pigments, varied germs, but no bacilli of tuberculosis.

(d) The class in which the bacilli of tuberculosis are alone or are found to preponderate, and the other germs are in exceedingly small numbers—harmless numbers, I am tempted to say.

(e) Those in which the bacilli of turberculosis and other infectious germs are present in numbers to produce each or combined some degree of toxemia and slight fever.

(f) Those in which the harmful complicating germs preponderate in quantity and quality (usually attended with more or less pronounced toxemia with characteristic fever).

And then another sub-division is finally made from the nature of the lesions, to-wit:

(g) The class known as miliary tuberculosis, in which the dessimination of one lung is more or less extensive, by the bacilli, in a rapid manner and with the formation of few or no tubercle.

(h) The class with congestion with or without hemorrhages.

(i) The class with cavities more or less pronounced, producing or failing to produce hemoptysis by destruction of vessel walls.

(j) The class known as fibrosis, which means an effort of nature to heal lesions by the formation of fibrous tissue.

By this method of divisions, based on historical facts, physical facts, physical examination, bacteriologic and microscopic analysis, I come to the conclusion upon which guess work is eliminated in the application of remedial measures and the danger of falling into the too common and often fatal error of riding a hobby is removed. Indeed, exclusive hobbies in the treatment of such a complicated disease as pulmonary tuberculosis are, at this stage of our experience and knowledge, so frequently a crime that one is not justified in neglecting any of the essential inquiries in each case to gain the best data obtainable for a proper and sufficient diagnostic judgment. Failure in this respect results in more or less guess work, and guess work is the foundation of misleading and the exclusive medical mania which sometimes ends in destruction of life or loss of opportunities to cure.

By systematic studies, as I have mentioned, I find, first, the

need to consider the history of each case, and the physical, mental, digestive and other factors. Second, the need to consider the lesions apart from the germs connected therewith; third, the need to consider, not only the baccillus of tuberculosis, but every other kind of germ, their special individual effects, and the pathologic phenomena to which they contribute in union with the bacillus of tuberculosis, or separately, or by virtue of their proliferation in tissues in good health or already diseased, or perhaps, by possible, if not probable biologic evolution of harmless and semi-harmless germs into violent factors under certain conditions, and the chemic transformations or combinations that may take place between the products of various germs growing together.

In this paper, however, I must leave out of consideration the lesions themselves, although each of them demands most careful notice at the hands of the practitioner. A hemorrhagic centre from congestion, for instance, needs a different treatment than a hemorrhagic centre from the destruction of a blood vessel by microbes. A consolidation by infiltration needs different attention from a consolidation from hemorrhage. And both kinds of solidification must be considered apart from a consolidation by fibrosis. And in each of these varieties, and all other varieties, besides the necessity of deciphering and realizing the lesion or lesions existing, we must decipher and realize the kind of germs developing in connection with them.

In cases of tubercular involvement prior to the specific germs appearance into the sputum, we are left to be guided chiefly by physical data, though the expert find important deductions in various analytical tests.

In pure tuberculosis, the bacilli of tuberculosis predominate; the other germs are too few in number to be of immediate danger; still, the possibility of their rapid development under numerous circumstances warns us to act on the defensive. In cases where the complicating germs play an important factor, as in the classes (e) and (f), the physician need know of their presence and influence and act accordingly. The chief complicating germs which are usually found in connection with tubercular infections of the respiratory organs are: the staphylococci, the streptococci, the diplococci, the tetrageni. The first three

are known to have, individually or collectively, more or less deleterious effects, by their power to soften tissues, poison the cells, intoxicate the nervous system, and reduce the vital powers of the blood, thereby aiding the bacillus of tuberculosis is in its destructive work. The tetragenus is uncertain in its effects. In some bases these germs, or some of them, precede the appearance of the germs of tuberculosis, and possibly prepare the field for the growth of the latter.

Besides these germs, one often meets with numerous air germs of indefinite properties, and not uncommonly the pneumonia bacillus and the grippe bacillus, in both of which instances we usually find lesions or witness symptoms of pneumonia or grippe.

With this exposition of the basis upon which the careful and conscientious physician should institute his treaments, I yield to the essayist who will follow me, and suggest remedies for the affliction in the pure and complicated conditions; in so doing feeling that I might be debarred by sufficient time to discuss treatments, I wish it distinctly understood that, after many years of experimental and clinical work, I cannot agree to any of the many exclusive therapeutic measures vaunted by their authors, and feel justified in warning the practitioner that it is as unwise for him, and dangerous and unjust to tuberculous patients, to treat them in a way to depend wholly on a specific remedy and neglect accessory means which experience and science have demonstrated as useful. I was first in experimenting with and suggesting and using serum for tuberculosis in America, and first to introduce serum from immunized horses in any country. Yet considering the bacteriology and pathology of the disease as above explained, I use antitubercle serum only in such cases as experience has taught me its merit, and they constitute a vast majority. I neglect nothing else that might be useful; such as inhalations, medicated air, ozone, tracheal injections of antiseptics, climate, dietetics, hydrotherapy, electricity, etc., etc. I apply such measures as appear right after taking cognizance in every case of the various germs and lesions that play a part in the phenomena of tuberculosis. In this statement, which in a measure anticipates the paper of my associate in the symposium, I feel it incumbent to apologize to him for intru-

ding in his territory. As I said, my excuse is that I may be unable to make the statement in discussion.

Symposium on the Biology, Pathology and Treatment of Tuberculosis.

By C. V. REYNOLDS, Asheville, N. C.

I hesitated some time before selecting the above as my subject, but when we see the cry for help depicted upon the pale, ænemic, forlorn and emaciated faces of the poor, unfortunate tubercular patient, and with the death rate of 16 per cent. of all humanity fast ebbing away by this dreaded monster, can you wonder that the pages of medical journals are filled with thoughts and suggestions in their behalf, with the hope of adding something to lessen this alarming death rate?

It is a proven and unquestioned fact that a systematic bacteriological report of examinations of sputum is of paramount importance in the management of tuberculosis. It would be an imposition upon you gentlemen, and merely a waste of time, to describe the technique of examing sputa, but will say the method of estimating the number of bacilli proposed by Nuttall, which consists essentially in rendering sputum fluid by adding a solution of caustic potash and making several mounts and counts of some specimen, thereby estimating number expectorated in 24 hours, is of great value in prognosis and treatment, but as it is the nature of this bacillus to hug the connective tissue surrounding the infected area, and especially in the incipient stage, where there is not much breaking down and pus, we often fail in our examinations entirely; then upon the second examination we may find our field studded with pus cells, Strep., Staph., Dip., and everything that would suggest tuberculosis; upon the third examination our efforts may be successful, and Tubercular bacilli will be found.

I agree with Nuttall as to the great importance of the examination of sputum for diagnosis, but with an experience of about 3,000 specimens examined, and noticing how greatly the mounts from the same sample vary, and realizing how difficult it is, even when every other symptom indicates improvement to cause com-

plete disappearance of the bacilli in abundance when there has been an increase of respiratory expansion, diminished infiltration, etc. After such an observation I cannot attach as much importance as a means of diagnosis.

Second to the above merely in a diagnosis, and first to give us knowledge as to our patient's improving or succumbing to this disease, we get by a systematic examination of the blood, which gives us the key whereby we can see at a glance the constitutional effects of our treatment. Dr. Holmes, of Denver, speaks very highly of the examination of blood as a means of diagnosis in the early stages of phthisis by means of the degenerative changes within the Leucocytes. This I am not prepared to ratify or deny, but merely bring it before you for discussion.

Dr. M. L. Stevens, of Concord, who is now in Asheville, has partially completed a series of examinations of blood in tubercular patients, and so far has reached the following conclusions:

"A blood count only gives a small part of the information needed in these cases. Thorough examination of stained specimens also necessary. Degenerative changes in the Leucocytes are present in all cases of advanced Tuberculosis.

"Arrested or perverted development of red cells is present in all advanced cases.

"The changes produced by treatment in both red and white cells approach toward the normal or retrogression therefrom constitute our most reliable data on which to base the ultimate prognosis of the case."

My observation has been that the blood in most of the cases, especially after the incipient stage, and when there is some mixed infection, is profoundly altered and devitalized. Nearly all inflammatory and infectious diseases are characterized, as you know, by leucocytosis, phthisis being an exception, there being a diminished amount of leucocytes in quality if not in number. J. H. Burch, in a paper read before Syracuse Academy of Medicine, cites a very interesting case in which the patient was supposed to have had Typhoid Fever, but failing to get a reaction from any of the typhoid tests, a blood examination was made, and there was found present red blood corpuscles normal, Leucocytes diminished, those predominant, being the large Uninuclear Lymphocites, and now and then a Myelocyte. This sug-

gested Acute Tuberculosis, which was confirmed several days later when a specimen of sputum could be obtained.

I have examined several cases of blood of tubercular patients, and found as a rule red blood corpuscles greatly diminished in number and in a degenerated condition, with leucocytes, sometimes large, sometimes small, there seeming to be in some no cell wall, neuclei fragmented, and frequently just an irregular mass of broken down matter.

Upon the second or third examination, if your patient is doing well upon your treatment, you can see these blood cells take on a healthy appearance, increase in number, and witness with your patient the grand results of your labor.

Not so in the examination of sputum. Each month both you and your patient are disappointed by finding your examination unsatisfactory, which casts a gloom upon him, and at least an interrogation point as to your treatment.

Now, gentlemen, the leucocytes are nature's army, and it is by their chicanery and fortitude we expect to a great extent our result in the treatment of this disease. So it seems to me that in the future, if not in the past, we should watch closely after their condition, and see, if possible, that nature's "antitoxine" can't be kept at par.

Koch, since 1897, had extracted from tubercle bacilli by allowing it to stand three days with temperature of room, with 1–10 normal soda solution, after which the fluid was filtered, but the filtrate was never free from baccilli, although dead, and when used, periodical chills, fever and abscesses were produced. To remove this objection this precipitate was filtered through porcelain, and the bacilli was found to be absent, and no abscess was formed.

The use of this tuberculine upon the human being should give no ill effects in a non-tubercular subject, but it has a selective action, and localizes itself at the seat of infection, producing a hyperemic congestion which may cause resolution, or add kindling to the fire to flare up, and death result, which otherwise would have rested quietly in its latent state. I think Dr. Paquin, who has made experimental tests, will bear me out in my assertion of the above statement. As it is in cattle, so in man it may be of great value in distinguishing a tubercular from a non-

tubercular subject, but you kill the infected cow, and under the same penalty, how would you like to be the man? This tuberculine is the specific chemical poison of the bacillus of tuberculosis, and great honor should be to Koch for his untiring energy and research in solving this great mystery, and thereby adding so much to medical science, but the use of a toxine for diagnostic purposes, which may cause a waking up of a slumbering disease, which may result in death, is a question indeed.

Koch, Fisch, Behring, for a long while doubted as to which toxin was best to utilize in preparing the antitoxine from which they might get best results, until proven by Behring's researches that it was essentially the same, whether old tuberculine, T A, T O, T R, or any other modifications, were used, the practical difference being in the degree of toxicity and the intensity of the antitoxine.

Behring maintains the principle which Paquin has held from the time he introduced serotherapy in tuberculosis, merely that the only way to immunize an animal or man against tuberculosis is to use a tuberculine containing all the active principles or poisons found in the germ and its products in cultures. As Maragliano and Paquin were the first to introduce serotherapy in tuberculosis in the world, and as Behring is master in that line of investigation, we are warranted in adjudicating their position as substantiated by science.

Say then an animal treated with tuberculine, from which an anti-tubercular serum is secured, their serum acquires the property of neutralizing the poison produced by the toxin of the tubercle bacilli. Suppose this to be the fact, and we have the toxin in the system neutralized, a question naturally arises: what destroys the bacillus itself? It seems to me to simply destroy the toxic effect of a poison and not get directly at the manufacturer of the toxin itself, would merely keep the trouble under control and never eradicate the disease?

I cannot understand this unless it aids us, and at last we are compelled to return to our old friends, nature's germicide, the leucocyte, to destroy the intruding and unwelcome visitor, the tubercle bacillus.

MINUTES.

The 47th annual meeting of the North Carolina Medical Society was convened in the Opera House in Tarboro, May 22, 1900.

The Society was called to order by Dr. Julian M. Baker, of Tarboro, Chairman of the Local Committee of Arrangements.

The exercises were then opened with prayer by Rev. J. B. Morton, of the Presbyterian church, in Tarboro, as follows:

Almighty and most merciful God our Heavenly Father we adore thy great and holy name, for thou art here present with us as thou art always, filling every place with thy invisible but living spiritual presence. We confess before thee our manifold transgressions and humbly ask thee to forgive our sins, and as we confess them before thee we would not add to our other transgressions the sin of ingratitude. We are before thee to thank thee for thy blessings upon us, for the many marks of thy tender love which have crowned our lives and now especially do we ask thee to accept our thanks for the mercies and blessings which thou hast brought into the world from the hands of those who practice the art of healing. O Lord, we thank thee that thou hast elevated from this profession the great cloud of superstition. We thank thee for every improvement that has been made in surgery. We thank thee for the discovery of anæsthesia; we thank thee for the finding out of so many substances and compounds and appliances by which human suffering has been alleviated and human life prolonged. We cannot thank thee enough for those things, O gracious God, when looking back in the past we see in the history of this world's industry the weak and the decrepit, the marked and the pitted, and the short lived, who have passed on before, and whose groans and sufferings have not been relieved save by that summons which thou has sent calling them hence. So we do thank thee, gracious Lord, that thou cast our lives in these pleasant places. And now we crave thy blessing to rest on this assembly. Wilt thou grant to them new light and fresh zeal in the work thou hast given them to do; wilt thou bless them as they undertake to

carry blessings to others; wilt thou be with them and give them consciences that shall appreciate the responsibility of human life placed in their hands; wilt thou direct them with skill and success that they may minister to their suffering brethren in the flesh. Lord, we do pray that thou wilt let thy blessing rest on each one in his work at all times, and when at last they stand beside the death bed wilt thou give them faith as they look into the departing face of the afflicted one, to place their own case in the hands of the great physician, that their souls healed of the disease of sin may lead triumphant in the life that is eternal. And let the rich blessing of heaven rest upon us all, through Jesus Christ, our Redeemer. Amen.

Address of Welcome.

By DONNELL GILLIAM, Esq., Tarboro, N. C.

Mr. President, Gentlemen of the Society, Ladies and Gentlemen:

The resident members of our society have honored me with the commission of extending to you, on behalf of the community and themselves, a most cordial and hearty welcome:

The genuine spirit of hospitality, like that of mercy, is not strained. It is counted an universal virtue, but like many of the simple things of life is often lost in the seeking. It is not susceptible of imitation, or counterfeit presentment, it has a grace and charm peculiarly its own. It is not shown in the pride of costly parade, the pomp of ceremony, nor in the vulgar spirit of ostentation and display. It is an unbought grace of life which springs naturally among generous and refined natures to cheer and charm social intercourse. It is marked by gentle courtesy, the endearments of friendship, and unrestrained ease of sincerity. It is that of simple, but hearty welcome, which evinces pleasure in receiving, and its service commands all the friendly and generous impulses of our nature.

> "It must appear in other ways than words,
> Therefore I scant this breathing courtesy."

I bid you a cordial, a hearty, and a sincere welcome. A welcome to our homes, a welcome to our hearts.

Dr. J. M. Baker announced that the 47th annual meeting of the North Carolina Medical Society was ready for business.

Dr. Chas. J. O'Hagan was then introduced by President Long and responded to the address of welcome as follows:

Ladies and Gentlemen: My medical friends have served me a rather mean trick this morning. I am not prepared to be entrapped, though I have been. After listening to the eloquent address of welcome from my distinguished young friend, Mr. Gilliam, I feel how incompetent I am to respond to it in a fitting manner. I hope I will not be considered irreverent if I say they have reversed the proceedings of the marriage of Cana in Galilee. In my case I can only give you water and I am sorry for it. However, it is pleasant to me to meet my friends in the historic town of Tarboro. When the Medical Society of North Carolina lay as it were almost an inanimate corpse it came here and was vivified and resuscitated and given new youth and health until it has grown now to be a distinguished body in the State's history. It was here it met first directly after the war. It has met here several times since, and that same generous and warm welcome which Mr. Gilliam has for us to-day we have experienced before. I have no doubt it comes from the heart. I am quite satisfied that to the hearts and homes of these people you will be received with warmth and welcome, and you will go to your homes pleased and gratified and will think of the warm hearts of Tarboro many months to come. A wise gentleman has said, "Brevity is the soul of wit." I have no wit, but at the same time I will give you an example of brevity. After thanking the people of Tarboro for the welcome which we shall enjoy, I will do you the great favor of ceasing at this moment..

The Secretary then called the roll, after which President Long read his message.

The chair announced the following committees:

On Credentials: J. M. Baker, L. J. Picot and R. H. Whitehead.

On Finance: C. M. Poole, H. M. Fletcher and M. P. Perry.

On the Pittman Prize: Robt. S. Young, R. H. Whitehead and Kemp P. Battle, Jr.

No one being present who was to read a paper on the morning of the first day, Dr. J. H. Marsh, of Fayetteville, consented to read his paper on "Chronic Cystitis," which was on the program for the second day afternoon.

Discussed by Drs. Lewis, Rodman, O'Hagan, Fletcher, Galloway, Holmes, Dodson, Sanderford, Whitaker, Boss, Battle, Walton, Everett and closed by Dr. Worth.

Dr. C. J. O'Hagan: If there is nothing before this Society I would like to offer a resolution which will be heartily endorsed by this body. A dear personal friend of mine, Dr. William McDowell, has been confined to his bed several weeks. He is lying now in a very precarious condition, somewhat despondent as to recovery. I am sure it would be very gratifying to him if this body of his colleagues would send him by telegram a message of condolence and sympathy. I move that such a resolution be endorsed by this body and sent to him at once.

Dr. W. C. Galloway: I would like to second that motion and say, that I have little sympathy with the idea of being kind to a man when he is dead. I believe if we have any beautiful flowers to cast on anybody we had better do it in the flesh, and, in carrying out this idea, I second this motion.

The report was unanimously adopted and the Secretary was instructed to send the telegram of sympathy to Dr. McDowell.

Dr. G. T. Sikes moved that a committee be appointed to make a report on the President's address which was seconded and carried.

Dr. R. H. Lewis moved that Dr. Henry T. Bahnson be put on the honorary roll of the Society. Carried.

Dr. G. T. Sikes: Why did you not adopt in that all those who had been members 30 years and were entitled to honorary membership.

Dr. Lewis: If it is not too late I will.

By concession all members who were entitled to be such were made honorary fellows.

Dr. Sikes then read a card from Dr. C. G. Nichols.

Dr. J. C. Walton: I know Dr. Nichols, he is a worthy man, a poor man, and I move under the circumstances we admit him upon the payment of his dues, $2.00, and that the old dues be cancelled.

Dr. C. M. Poole: If he failed to pay his dues before he had misfortune, I do not know whether he should have our sympathy or not.

Dr. Sanford: I move that this matter be put in the hands of the Committee on Credentials.

Dr. Sikes: He paid his dues punctually until 1895, he is 5 years behind. To that time he paid his dues regularly since he joined in 1891, having paid now $12.00.

Dr. Fletcher: I am in favor of this resolution, the only thing is, are we not establishing a bad precedence?

Dr. Walton: I move that it be referred to the Committee on Credentials. Motion seconded.

Dr. Marsh: I would like to ask if it would not be the best plan for us to make up the amount for the Doctor?

President Long: Permit me to suggest that the mover has consented to modify his resolution and let it go to the Committee on Credentials. His purpose, I suppose, is to give opportunity for seeing the merits of the case.

Motion was carried to refer to Committee on Credentials.

Dr. Sikes: Mr. President, did I understand that Dr. Lewis included in his motion all those names who had been members of the Society and paid their dues 30 years?

The President: All who are in good and regular standing who are entitled to go on the roll of honor.

Dr. Sikes: Then I would like to call the names from the record. H. T. Bahnson, Salem; W. W. Love, Wilmington; Jas. McKee, Raleigh; Willis Alston, Littleton; W. J. H. Bellamy, Wilmington.

First Day—Afternoon.

The Society was called to order at 3:30 o'clock by the President.

The report of the section on gynecology was called for, and Dr. B. Ray Browning, chairman, read a paper on Endometritis, its Pathology and Symptoms, with Special Reference to Treatment.

Report of the Section on Anatomy and surgery.

Dr. A. S. Pendleton, Chairman, presented a paper on The Ambulatory Treatment of Fractures.

Discussed by Drs. Picot, O'Hagan, Laughinghouse and Bass.

An Unusual Case of Appendicitis was presented by M. P. Perry, of Macon.

Dr. O'Hagan moved that Dr. J. H. Branham, of Baltimore, be accorded the privilege of the floor. Carried.

Dr. Branham thanked the Society.

A paper on Hemorrhoids was read by H. T. Bass, of Tarboro.

The President announced that all essays in competition for the Pittman prize of $100 should be handed to Robt. S. Young not later than Tuesday night, if possible.

Dr. James H. Branham, of Baltimore, read a paper on "Pylorectomy for obstruction due to Adenocarcinoma, with exhibition of patient."

After the reading of the paper the patient on whom operation was performed was exhibited and also section of the growth, under the microscope.

On motion of Dr. O'Hagan a vote of thanks was given Dr. Branham for his interesting and instructive paper.

On motion of Dr. B. F. Halsey the papers in the section on anatomy and surgery were referred to the committee on publication.

The Society then adjourned to meet at 8.30 in the evening.

First Day—Evening Session.

The meeting was called to order by the President at 8.30 P. M.

A note was read from the Edgecombe Club extending the privileges of its club rooms to the members of the Society during their stay in the city.

Dr. K. P. Battle, Jr., Chairman of the Obituary Committee, made his report as follows, which was adopted:

Dr. E. H. HORNADAY.

Prepared by Thos. M. Jordan, M. D., of Raleigh, N. C.

The subject of this sketch, in the common acceptation of the term, was neither brilliant nor great.

Yet, when we remember that to be great is to be good, and to be brilliant is to be thorough, he was both.

Dr. Hornaday, as husband and father, was in every particular loyal and true, and his home was as happy as love could make it.

His wife after a protracted illness died June the 27th, 1891, and while bowing in all the submissiveness of a true Christian to this bereavement, to use his own words, he surrendered all desire to remain longer on earth, and constantly prayed, that as

soon as it might please the Master, he might follow her whom he loved.

Just one year previous to his death he called the attention of the writer to the place where he desired to be buried, said that his wife could be removed and placed beside him, remarking at the time, "I camped on this very spot during the war and I want to be buried here when I die."

That the summons was a welcome message to him there is no doubt. Dr. Hornaday was born April 4th, 1838, and grew up to manhood in Chatham County, N. C. He attended school at Guilford College, N. C.

His first occupation was teaching, and in Wayne County he spent his early manhood in this work. He read medicine and attended a course of lectures but was interrupted in the pursuit of his studies by the civil war, through which he passed. He followed the Confederate flag from the beginning to the end. At the close of the war he commenced his medical course, and graduated from the College of Physicians and Surgeons in Baltimore. Returning to Goldsboro he entered into practice in partnership with Dr. Geo. L. Kirby, but an opening in Greene County for a physician being presented to him, he removed to that point, where he spent the remainder of his days, devoting his whole time to the demands of his profession, for which his devotion was second only, to that for his family.

He was a student for the sake of knowledge and to increase his usefulness to his patrons, whom he served with a belief that to be faithful to them was to serve the "Great Physician."

As a practitioner he was conscientious and painstaking, bestowing attention alike to all who came under his treatment.

His patronage covering a large area, his life was active, and up to within a few years of his death his health was almost perfect, and so sympathetic was his nature that the night was never too dark, the weather too cold, nor the road too long for him, when suffering humanity claimed his assistance. The ideal "Country Doctor," battling alone with that grim monster, Death, too far away to obtain consultation, lacking the modern consultation, lacking the modern conveniences for combatting disease, relying upon his own resources, and trusting in his God, excites the admiration of all people and is justly denominated a

hero among, as well a benefactor to, mankind. All this was exemplified in the life of Dr. E. H. Hornaday, who, on the 20th day of March 1900. as he was in the act of getting in his buggy to visit a patient dropped dead while in harness so to speak. Since 1878, he had been a member of our Society, and until recently was a constant attendant at its meetings. In 1881, he read a paper upon Ainhum, a very rare disease, coming under his observation. The article was copied by various medical journals, and brought numerous letters of inquiry from several leading surgeons. His advice was often sought outside of professional lines, but persistently he refused to encumber himself with any matter that conflicted with his regular work.

He was a consistent member of the M. E. Church and died relying on the promises of the Father.

"None knew him but to love him,
None named him but to praise"

ROBAH F. GRAY, M. D.

Dr. Gray was born December 24th, 1852. He received his classical education at the Randolph-Macon College, and graduated in medicine at the Louisville Medical College and at Bellevue, New York. After practicing in Winston for a few years he removed to Danville, Va. but in two years returned to his old home. After a lingering illness, nearly a year was spent in hospital, he died March 5th, 1900. He married Miss Lelia Wilson, of Danville, who survives him with seven children.

Dr. Gray was wholly devoted to his profession; he never refused a call; day and night he was ready to respond to any demand made upon him by the sick and suffering. In his relations with the afflicted he was gentle, untiring and devoted, and his numerous patients adored him. He had probably the largest practice in Forsyth county; knew no rest or recreation, and died a martyr to overwork in behalf of others.

JOHN H. TUCKER, M. D.

Dr. Tucker was born in Brunswick County, Va., October 27, 1842. He was educated at Hanover Academy, William and Mary College, and the Virginia Military Institute. From the last named he enlisted in June, 1861, as a private in the Third

Virginia Cavalry. After a faithful service of twelve months he was honorably discharged on account of physical disability, and resumed the study of medicine, which he had already begun during his collegiate course. In the spring of 1864 he was graduated from the Virginia Medical College, and immediately re-entered the Confederate service as assistant surgeon, being assigned to the Chimborazo Hospital at Richmond, Va. In September, 1864, he was commissioned assistant surgeon in the Confederate navy, serving on the gunboat Pee Dee until the fall of Charleston. He was then sent to the Marvin Hospital at Drewry's Bluff, where he was captured in the spring of 1865.

After the close of the war he went to Okolona, Miss., where for seven years he was engaged in active practice and in farming. In 1872 he married Miss Willie Hill, a noted belle of Eastern North Carolina, and two years later made his home in Henderson. In July, 1897, he had a severe attack of illness from which he never recovered, although after a winter in Florida and a summer in the mountains, he resumed his practice to a limited extent. He died February 24th, 1900, at the age of 58, leaving a wife and six children, one a promising physician of the same name.

In his profession, and in the State Medical Society, he was an honored leader. From June, 1887, to May, 1893, he was a faithful member of the State Board of Health, and in 1895 he was President of the Society.

The esteem and affection in which Dr. Tucker was held by the people of Henderson, and by all who knew him well, was extraordinary. In all the walks of life, as husband, father, physician, Christian, citizen and man, he was a model. Hospitable, unobtrusive, unselfish, courteous, refined, gentle but strong, he was a noble type of the true southern gentleman.

WILLIAM R. WOOD, M. D.

Dr. Wood was born in Washington county in 1834. He received his medical education in Philadelphia, and settled at Palmyra, Halifax county. On the outbreak of the war he entered the army as Lieutenant in Company B, First North Carolina Cavalry. He was promoted to Captain of Company G, holding that position till the battle of Gettysburg, when he was

wounded in the shoulder, after which he entered the medical department and rendered faithful service till the end.

About 1859 he was married to Miss Mary Daughtry, of Gates county, who lived only about one year. In 1862 he was married to Miss Henriette Anthony, of Scotland Neck. Of this marriage there were two children, a girl, who died in childhood, and a boy, who became a lawyer of promise, but died in early manhood. He suffered the loss of their mother also, and for several years was the last of the family.

At the close of the war Dr. Wood established himself at Scotland Neck and for many years was one of the leading practitioners in his section of the State. He became a prominent member of the State Medical Society, and from 1884 to 1890 was a member of the State Board of Examiners, serving as its President. In 1890 he was elected Superintendent of the State Hospital at Raleigh, then known as the North Carolina Insane Asylum. He resigned in 1895 on account of the failing health of his wife and returned to his practice.

Dr. Wood did not confine his activities to his profession. He was for some years the chairman of the County Board of Commissioners of his county and took interest in the welfare of his community, his party and his State. He died July 11, 1899.

W. C. McDUFFIE, M. D.

Dr. McDuffie was born in Cumberland County, February 10, 1829. After completing the course at the Summerville Academy he entered the medical department in the University of New York and graduated in 1895. He practiced medicine throughout life at Fayetteville, with the exception of the time spent in the Confederate army, in which he held the rank of Brigade Surgeon.

During his long professional career he was one of the leaders among the exceptionally able group of physicians of the upper Cape Fear. He was successful in many lines of activity. Prominent in the State Medical Society, he served as its president in 1894. For six years he acted as chairman of the magistrates of the county and afterwards was Chairman of the Board of County Commissioners, was County Physician and Superintendent of Health for sixteen years, held high position

among the Confederate Veterans, was many years local surveyor of the Atlantic Coast Line Railway, was examiner for many life insurance companies, was a Knight of Pythias and an Odd Fellow and was much interested in the material prosperity of his community.

Dr. McDuffie married Miss Catherine E. Dodd in 1858, and the union was blessed with three sons and two daughters. Toward the close of his life he was called upon within the space of two years to bear the loss of his wife and two sons, one a prosperous physician and the other a prominent druggist. Mr. E. B. McDuffie, of New York, Mrs. N. E. Bunting, and Mrs. C. M. Glover survive him. He died October 31, 1899.

Dr. ALMAN HOLMES.

Dr. Alman Holmes, the subject of this memorial, was born on the 17th day of February, 1831, and died on the 24th day of February, 1899, being 68 years of age. He was descended from a long line of illustrious ancestors. One of his grand uncles was the distinguished governor in the early history of the State. It has gone into history that Governor Holmes was of extraordinary ability. The Honorable J. C. Dobbin, Secretary of the Navy in the cabinet of President Franklin Pierce, married a near kinswoman of Dr. Holmes. Afterward James C. Dobbin, Jr., married a sister of Dr. Holmes. Not only by birth but by marriage was the old home of Dr. Holmes the meeting place of many of the most distinguished men of this nation. Reared in such a home and surrounded as he was by men of great learning, we can the more easily understand the culture and dignity of Dr. Holmes. In and around his home, and not only in his own county but in the surrounding counties, Dr. Holmes was said to be the most polished and dignified member of the medical profession. Dr. Holmes read medicine under Dr. W. G. Micks, of Clinton, who was one of the most courtly, cultured men of his day and time. Dr. Holmes was afterward graduated in medicine from the University of Pennsylvania in 1852, and began the practice of medicine in his native town of Clinton. In November 1852, he was happily married to Miss Fannie A. Sellers, of Clinton, a woman of many charms and with all her rare attractions, possessing a rich fund of common sense. At

the time of their marriage, this young couple was said to be among their associates, the most highly cultured in the county. Dr. Holmes was appointed surgeon in the Confederate States army, having charge of one of the largest hospital in Petersburg, Va. Many an old soldier, who limps through life to-day, owes his life largely to the skill and ability of Dr. Alman Holmes. He was said by many to be one of the finest surgeons in the State. After the war he was frequently sent for by admiring medical friends to assist in some difficult surgical operation.

As a surgeon and as a practicing physician he stood at the head of his profession.

One trait which stands pre-eminent in his character, one that would do him great injustice not to mention, was his *great kindness and sacrificing attention to the poor.* It made no difference how poor a family was they knew this ever faithful physician would give them his best skill and ability. If we had to chisel a memento upon his tombstone we would inscribe in imperishable letters. "Here sleeps a friend to the poor." From this imperfect sketch it can be the better understood what a splendid vestryman he made in the Episcopal Church at Clinton, of which church he was an honored member, dying in the faith of his fathers. "Peace to his ashes." A good and great man has passed from among us.

W. E. TURLINGTON, M. D.

Dr. W. E. Turlington, the oldest of the eight sons of Eli and Sarah Turlington, was born Oct. 22, 1855, in Johnston county. In boyhood on his father's farm, and in the mill he early exemplified that energy of judgment which characterized his life. He became a successful teacher at the age of eighteen. His medical education was received at the University of North Carolina and at the College of Physicians and Surgeons of Baltimore, where he was graduated in 1882. He located at Benson and married Miss Ella Morgan. He was devoted to his practice, which quickly became a large one, till his health gave way about two years before his death from appoplexy, Sept. 21, 1899. His was a noble character.

Several attempts were made to secure same data concerning

the life and death of other deceased members of the Society, but without success.

K. P. Battle, Jr., Ch'm.
P. L. Murphy,
G. W. Purefoy.

Dr. J. C. Walton read a paper on "Infant Feeding."

Dr. Baker announced that the Edgecombe Club would give a reception to the Society Wednesday evening after the exercises n the hall.

Dr. C. M. Poole, Chairman of the Finance Committee, made his report as follows:

1899.		
May 30th.	To balance on hand	$ 307.71
June 2d.	Amount collected	624.00
Nov. 3d.	" "	184.00
1900.		
May 21st.	" "	62.00
	Total	$1177.71
1899.		
June 1st.	Paid Dr. Geo. W. Pressly	$ 157.49
" 2d.	" " R. D. Jewett	376.00
" 2d.	" Stenographer	50.00
" 2d.	" Dr. G. T. Sikes	100.00
Aug. 17.	" " Geo. W. Pressly	5.00
Sept. 30.	" " Postage	4.72
Nov. 3.	" Observer Printing House	301.55
" 8.	" Stationery	2.00
1900.		
Jan. 2.	Paid Observer Printing House	50.00
May 19.	Postage, etc	2.26
	Total Expenses	$1050.00
May 21st.	To balance on hand	127.71

We recommend the usual assessment of $2.00 per capita; that the salary of the secretary be $125.00, and that of the treasurer $100 00. We recommend that a stenographer be employed at a maximum salary of $25.00.

C. M. Poole,
M. H. Fletcher,
M. P. Perry,
Committee.

The Treasurer presented the resignation of Jas. N. Cunningham, which was accepted.

The President then called for report of interesting cases. The following members responded:

Dr. J. F. Sanderford: I was called upon some time ago by the father of a child 5 years of age, to prescribe for the child, suffering from nausea, but at the time I did not see the child. He was giving the child calomel, followed by a saline. He saw me Monday morning. Monday afternoon about 6 o'clock I saw the child. I suspected that there was intestinal obstruction, but on examination was unable to find any enlargement. There was no history of griping, and I put the child on some pepsin and watched it, and gave it calomel, 1-10 grain, followed by salines. The next day I instructed that an enema be given. Dr. Sikes saw the child with me Thursday. There was complete obstruction, and some tenderness in the region of the gall bladder. There was complete obstruction about 12 days. I think my diagnosis was that there was an obstruction of the pyloric end of the stomach above the bile duct, but what the nature of this obstruction was I would like for somebody to tell me.

Dr. G. T. Sikes: In regard to the case Dr. Sanderford has reported we could not say definitely and absolutely what the case was, but our conclusion was that there was obstruction about that part of the stomach, and my opinion was that it was in the stomach or in the intestine, and I based my diagnosis at the time on the fact that there existed a hard spot or tumor about that part that ought to be felt by a digital examination, and at the same time I rendered the opinion that it was the beginning formation of some abscess, but I believe we never had any verification of that. Of course, it might be possible that the diagnosis was correct, and it may have undergone an absorption or resolution without ever suppurating at all. If it was not that I hardly know what to say, or think, it could have been. If it had been something on the order of a tumor we would not have expected that the child would be relieved and be entirely well. The child got well in about two weeks. The doctor and myself made an application of tincture of iodine on the outside as a counter irritant and kept up the tonic treatment and gave a little pepsin to support life. We tried to give as little food as possible, from the fact that it was only retained a few minutes in the stomach. We did not get a chance to have

an autopsy and we have not found out yet what was the exact nature of the trouble was, but the child got well.

PRESIDENT LONG: I understand that Dr. Leigh, of Norfolk, is in the Hall. We would be glad to hear from him on any subject.

Dr. Leigh favored the Society with some remarks. (See discussion on Dr. Bass' paper.)

DR. G. T. SIKES: I would like a word or two about a case I had some time ago, but I have no data except from memory. The patient was a married lady, had been married about three years. I was called to her some months ago, some time about the middle of last year possibly, and treated her from that time on for a case of endometritis. The case improved very much. Up to this time she had no conception, and after some months treatment her condition improved very much, her general health built up and and she presented the symptoms of conception. At first I made a diagnosis in a month's time by Hagar's method and told her I thought she had conceived. Her periods did not cease absolutely, but diminished to a minimum, and come on at each regular time. The matter went on and the signs of pregnancy were still not plain to me. She also, while suffering with the endometritis, suffered to a considerable extent with displacement of the uterus. After a month's time or a little more I decided that pregnancy did not exist in the uterus, but I found in her case that the right tube was enlarged and it continued to grow, the uterine tissues remaining about the same, the cervix still soft, and as this growth got larger she was troubled more with the pulling of the uterus to the right iliac space, and I desisted from the first conclusion that she was pregnant, from the introduction of a sound, and I resorted to the elevation of the hips and lowering of the shoulders, and then it was an easy matter to press the uterus and it would fall back in place. It got so large finally that it would be painful when it fell back, and continued to grow like the normal pregnant uterus, and at the end of four and a half months she felt the fœtus perfectly plain and could feel it for nearly a month. The last time I saw her in that condition it was a little more than five months, and pressing the hand firmly on the tumor, I could feel perfectly plain what I considered to be fœtal pulsations, and she could

feel it also, and did feel it continuously until about the time for the termination of the fifth month. Before that time I told her what my diagnosis was. She is a very intelligent lady and her husband a very intelligent man. My diagnosis was that she has a case of tubal pregnancy in the right tube. I stated to her that in the modern advancement of surgery our surgeons had learned how to open the abdominal cavity and take out those abnormal pregnancies, and that possibly the fœtus might live. At the end of the fifth month her menses came on very full, and she passed a great deal of sloughing and mucus and, as she explained herself, "strings." From a few days before the menses she never felt the movement of the fœtus at all. The menstrual period at this time lasted her about three weeks. She was quite feeble, but not confined to her bed. At the end of this time the tumor had entirely disappeared, and there was no more pulsation and no more sign of pregnancy. My diagnosis was that she had a case of tubal pregnancy that the fœtus died and was partially absorbed and partially passed through the fallopian tube and uterus.

Dr. W. C. Galloway: Since I have been in Wilmington I find a great many cases have come to me with foreign bodies in the eye, which the general practitioner often sees. The general practitioner can, however, usually relieve such case as well as the eye man. All that it requires is a steady hand and courage to go at the eye. Fortunately I suppose I fell heir to an excellent knife that I have in my case. One day I was operating for a case of stricture of the duct and I did something we ought not to do, and that was to hold a small sharp Graaffe cataract knife in my mouth while I was performing the operation, and the knife slipped out of my mouth and fell on the floor, bending the point very slightly, and it is the most useful knife for getting things out of the eye I have ever seen. If the foreign body is just in the epithelium of the cornea, the knife just dips in the epithelium without cutting in any further. I use in the eye a solution of a 4 per cent. of mur. of cocaine to relieve the pain. Two or three administrations are necessary. If the foreign body is deep in the eye it is a good idea to send the case to the eye man. As simple a thing as it looks to be I have had the general practitioner to send me a great many cases of foreign bodies

under the lid. The simplest thing I know of is to take a match or toothpick and gently press on the upper lid, catching hold of the cilia, and tell him to look down and turn out the lid when the foreign body can be wiped off. I throw these things out to the general practitioner, for you can often correct these things without sending to the eye man at all.

Dr. J. P. Brown: I had a patient, a boy 14 years of age, who happened to an accident in a cyclone. A large tree fell on him, and in falling on the boy a large limb struck him on the head and pitched him over, and at one place a large limb broke and struck him in the lumbar region, and on the right thigh tore away the muscles and flesh on the outside, breaking the femur, which stuck in the ground four or five inches, and the left leg was broken in two places and partially dislocated, and the biceps of the right arm was snagged badly. I found the boy in the rain. He was lying in a low dark filthy hut on a cotton sheet. I looked at the boy and my first impression was if he was not dead he ought to die. I looked him over, and he had a pretty good pulse. I chloroformed him, straightened him out, and the more I looked at him the worse he looked. I sat and looked at him awhile and did not know what to do, so I went off and left him. The next day I went back and he was still alive. He had dirt, etc., in the end of the bones. In turning him on his back this large place in the lumbar region seemed to be very deep; I put my hand in it and examined it. I left him there and called in a couple of neighboring physicians. We straightened him out and washed him good all over. We then amputated the right leg up four-fifths nearly of the femur, and I got a very decent flap. The femur was broken in two places and the contraction was very great, and the way he was cared for knocked the antiseptic treatment out. The water used in the operation was gotten from an old well, surface water, and sorter muddy. In thirty days from the time I amputated the right leg I amputated the left. It was not quite a hip-joint operation, but it was high up. The boy is now fat, living and getting on well. The place on the lumbar region healed up and the boy is well, fat and hearty. He has to lie flat on his back, as he has not enough left of his legs to sit up.

President Long: I recall several cases of the colored race in

general surgery. I have been in the habit of doing some surgery in a plain way, and I do not remember to have ever had in my practice any trouble with a negro in my operations. I do not think it is exactly correct to say that water is septic because it is muddy, because the soil in my honest opinion is not septic, and if you will give me pure soil and pure water I will bid defiance to pretty nearly everything, and if you will give me pure soil I will almost say it. I will give you the water and the atmosphere, for that with all its rosy visions rest on the soil. I do not think that the Doctor's statement would be any evidence against the genuiness of asepsis and antisepsis.

The Society then adjourned to meet Wednesday morning at 10 o'clock.

Second Day—Morning.

Society called to order at 10 o'clock by the President.

Telegrams were read from Drs. Levy and Wakefield expressing regrets.

Dr. W. H. H. Cobb made the following remarks as the hour had arrived for the election of two members of the Board of Examiners:

Mr. President, before nominations for Medical Examiners are made, I would like to submit a few remarks for the good of this Society and for the benefit of suffering humanity. My term of service expires with this meeting, and I am in a position to speak both feelingly and authoritatively. I am the advocate of no candidate, not in any sense interested in any special candidate, but I love the Medical Society of the State of North Carolina, having by its courtesy and partiality secured the highest honors within its gift, and wish to see increased and perpetuated the high standard required of its licentiates, which has greatly earned for the Board of Examiners of North Carolina an enviable reputation in all the States of this Union. We need men of known professional standing and ability, possessing a due sense of the responsibilities and duties of this office, and with sufficient firmness, or *back-bone*, if you please, to reject all unfit applicants, even though the applicant should be a son of his nearest friend or dearest relative.

The President announced that nominations were in order for

the two members of the Board of Medical Examiners to serve for two years.

Dr. G. T. Sikes said that he would nominate a man who will exactly comply with the resolution which Dr. Cobb had just read, a man not large enough to do it by force but sufficiently competent to do it by skill. And the man is Dr. T. S. McMullan.

Dr. J. T. J. Battle rose to propose the name of a man who has the courage to act his convictions, a man of capability, and if he should reject a candidate he could approach him so pleasantly that the candidate would be glad to meet him. He then presented Dr. J. C. Walton.

Dr. Harris moved that the rules be suspended and the secretary cast the vote of the society for Dr. T. S. McMullan, of Hertford, and Dr. J. C. Walton, of Reidsville, for members of the Board of Medical Examiners to serve for two years.

Dr. Thos. E. Anderson, secretary of the Board of Examiners made his report as follows, which was adopted.

The Board of Medical Examiners having completed its work desires to submit the following report: Our registration list shows that the number applying for license was 79.

These 79 applicants held diplomas from 30 different medical colleges and institutions, distributed as follows:

University College of Medicine of Richmond, Va	12
University of Maryland	10
Southern Medical of Atlanta	5
North Carolina Medical College	5
Medical College of Virginia	4
Medical College of South Carolina	4
College of Physicians and Surgeons of Atlanta	4
University of Pennsylvania	3
Baltimore Medical	3
University of Tennessee	3
Woman's Medical College of New York	2
University of Nashville	2
Jefferson Medical College	2
Tennessee Medical College	2
Chattanooga Medical	2
Leonard Medical	2
Central Medical of Tennessee	2
Syracuse Medical of New York	1
Starling Medical of Ohio	1
Georgetown University	1

Columbian University of Washington..... 1
Harvard University..... 1
University of Colorado..... 1
College of Physicans and Surgeons of Ontario..... 1
Kentucky School of Medicine..... 1
Medical Department of University of Georgia..... 1
College of Physicians and Surgeons of New York..... 1
University of Michigan..... 1

Of these 79, 25 failed, 2 withdrew, 52 successful and duly clothed with authority to enter upon their professional career in this State.

Those licensed are as follows:

Elizabeth Delia Dixon, Raleigh; Sallie Borden, Goldsboro; Lucy C. Jones, New York City; J. Ernest Stokes, Salisbury; Robert B. Miller, Goldsboro; W. C. Kluttz, Salisbury; J. T. Shaffner, Jr., Salem; Edward Baum, Greensboro; R. M. West, Salisbury; J. C. Green, Greenville; G. G. Bell, Elizabeth City; G. E. Price, Sapphire; S. E. Ballard, Sagnaw; J. S. Buffalo, Gardner; George M. Pate, Gibson; Wade H. Bynum, Germanton; W. Henry Stratford, Greensboro; Neill MacRae, Fayetteville; L. B. Evans, Idaho; J. E. Patrick, Institute; W. F. Fortune, Greensboro; G. L. Sikes, Clinton; G. S. Watkins, Cornwall; D. R. Bryson, Bryson City; J. C. Wessell, Wilmington; Samuel Edwards, Goldsboro; W. C. Melvin, Winnie; A. C. Hoyt, Washington; E. J. Nixon, Wilmington; L. D. McPhail, Clinton; Raymond Pollock, Kinston; J. F. Hunt, Fallston; H. G. Powell, Fair Bluff; H. F. Glenn, Gastonia; Gaylord Worstell, Cherokee; W. E. Reid, Gatesville; B. H. Hendersan, Fayetteville; G. H. Hines, Smithfield; B. J. Witherspoon, Charlotte; Chas. H. C. Mills, Charlotte; Edgar H. Earl, Rochester, N. Y.; George W. Brown, Covington; G. V. Cloninger, Stanley; Wm. H. Houser, Shelby; Lem Watson, Broadway; R. S. Cromartie, Garland; W. H. Moss, Charlotte; W. F. Mitchell, Shelby; J. W. Fauntleroy, Saluda; W. A. Newman, Salisbury; William L. Dunn, Asheville; W. J. Thigpen, Conetoe.

This is the first examination held under the amended law requiring graduation from a medical college of not less than a three-year term. The highest mark attained was made by the two first ladies at the head of the list. D. R. Bryson, of Bryson City, led the male contingent and secured 92 4-7.

Of the 25 rejected, four held diplomas from the Southern Medical of Atlanta, two from the University College of Medicine of Richmond, two from the College of Physicians and Surgeons of Atlanta; two from the Tennessee Medical, two from the Chattanooga Medical, and one each from the Starling Medical College of Ohio, Medical College of Virginia, Georgetown University, North Carolina Medical, University of Nashville, University of Maryland, Medical College of Tennessee, University of Colorado, University of Georgia, and Medical College of South Carolina.

Respectfully submitted,

THOS. E. ANDERSON,
Secretary Board Medical Examiners.

The following committee on nominations were named by the President: H. W. Lewis, J. A. Burroughs, W. C. Galloway, Willis Alston, Chas. A. Julian.

Dr. J. T. J. Battle presented a paper on "Hypertrophy of the Pharyngeal Tonsil and its Treatment," which was discussed by Drs. Walton and Galloway.

Dr. C. A. Julian read a paper on "Automatism," which was discussed by Dr. Fletcher.

Dr. D. S. Morrill read a paper on "Should Physicians Supply the Medicines they Prescribe." Discussed by Dr. O'Hagan.

Dr. J. B. Smith presented paper on "Gall Stones with Report of Case."

Dr. A. G. Carr then read a paper on "Emergencies in Obstetrics," which was discussed by Drs. Stamps, Weaver, Marsh, Morehead and O'Hagan, when further discussion was postponed as the hour had arrived for the conjoint session with the State Board of Health.

THE CONJOINT MEETING WITH STATE BOARD OF HEALTH.

DR. CHAS. J. O'HAGAN presided in the unavoidable absence of President Thomas.

Dr. O'Hagan opened the conjoint session in the follow-lowing address:

I have had honors thrust on me to-day in being called upon to preside over the conjoined meeting of the Board of Health and the State Medical Society. Honors of this kind sit very awkwardly on me, and if I do not wear them gracefully I hope I may wear them not disagreeably. The majority of you gentlemen can hardly recollect when the Board of Health of North Carolina was first formed. The Legislature of this State made a most munificent appropriation to this body, of $200.00 per annum, which was not quite enough to furnish stationery and stamps. It was then in the hands of one of the best men belonging to the profession, Dr. Thomas F. Wood, and with this scanty amount with enthusiasm and zeal he continued to work and kept the thing alive until the beginning of another meeting of the Board to whose unremitting labors it is largely due to the position in which it now stands.

By iterating and reiterating the importance of this work to the State, the State has been induced to make a larger, but still infinitely smaller than it ought to be, a larger appropriation for carrying on this work, and the work it has done has been of immense value.

It had to begin at the beginning. It had to teach the laity throughout the country the immense value of pure water. For the first time attention was called to the fact that dirty water was one of the most fruitful sources of disease. They have to be called upon to explain the value of pure water and air, and yet the people have been breathing the one and drinking the other all their lives, and were ignorant that these primary elements were one of the most fertile sources of disease that

sometimes decimated the whole country. Again this Board of Health has called the attention of the people to the arrest of epidemics and dangerous diseases. Like a sentinel on a watch tower it has called the attention of the people of the State to the recognized methods of prevention, and has induced them to take advantage of this, and in that way has done immense good, but still the province of the Board of Health is not limited to teaching people how they shall live, for there are other things as important. It has a wider scope, a longer range, and with your permission, gentlemen, I beg leave to call the attention of this body, hoping to convey through them some idea of the impor- of the views I entertain to the laity throughout the country of these things. While the world, in many respects, is very much better than it formerly was, in other respects it is no better. Seventy-five years ago the Lord Chancellor of England announced that the schoolmaster was abroad in the land, and he has been travelling over the land and illiteracy is disappearing, but while illiteracy disappears I fear that it is not followed by any correspondent improvement in the modern advancement of the world.

The clergy will tell you every Sunday from the pulpit that the world is getting worse, and while I do not agree with that broad statement, I fear, notwithstanding their labors for 2,000 years, the world has not profited by them quite as much as it ought to have done. The great mistake that a medical man will point out for the vast amonnt of labor which has been wasted is the fact that they have not recognized the close relation which exists between the physical and psychological portion of man. The physical basis of life involves and contains every function whether mental or physical, pertaining to the human being. We have been under the erroneous impression that the mental functions, the mental phenomena, were separate and distinct from the physical functions. The mental and physical are intimately related and if you wish to improve one you must improve the other. This, then, is the reason why such a vast amount of labor has been wasted, thinking that we can cultivate the moral and intellectual without taking care of the physical. We have improved the physical, but I fear the moral has not been improved in corresponding relation. We have forgotten the effect of heredity. It has been well known for centuries

among the people that like produces like—like father, like son. The belief has been firmly grounded in them for centuries and centuries, but no value was attached to it, no practical value was derived from it because no pains were taken to cultivate a race from which criminal and moral heredity should be eliminated. We all know we can improve the breed of cattle, whether feed animals or work animals; by careful selection we have produced some of the noblest animals of the world. The Kentucky racer from the blue grass of Kentucky was bred from the common banker pony. We look on truly indifferent to the fact that incompetent people hastily rush into the matrimonial relation and thereby propagate a crop of descendants equally incompetent and degenerated. We see also the criminal classes are allowed to meet and reproduce their kind. We find that constitutional diseases, such as insanity, epilepsy (which could hardly be called a constitutional disease), syphilis, and all these other things which descend from father to son, are allowed to go unchecked. And what is the result? To protect society from the incompetent and vicious and criminal classes the whole land is dotted with jails and prisons, enormous sums of money are expended annually to protect us from the criminal classes, and charitable institutions, like insane asylums, are more or less evidenced in this and other States to extend the hand of charity to these unfortunates. Year by year these expenses are increased, and year by year the criminals and incompetents, and others of a similar class, are increasing at a rapid ratio. Is there not a remedy for all this? Shall we allow the criminals and incompetents to increase *pari parsu* with us, and year by year protect ourselves from the assaults of these classes? Is there no remedy? I think there is.

Among recent years the study of anthropology has been added as it were an annex to the medical profession, and we have taken the position of Alexander Pope that the proper study of mankind is man, but scientific study, and that will in no distant time provide a remedy, or at least a partial remedy. Assaults on personal property are not decreasing, and all the agents which have heretofore been called in to prevent them have each and all been signal failures. What shall we do to be saved? It seems to me that the schoolmaster who is teaching to read and write,

and the minister who is endeavoring to awaken in them a sense of their duty to themselves and to their Creator, have each failed because they have not come to the practical application of the knowledge they have. Legislation will not, I think, in the immediate future, and hardly, I fear, in the remote future, be called upon to provide a means. It does seem to me, gentlemen, that the marriage relation which is assumed so recklessly and thoughtlessly should be strictly subjected to State supervision and no man or woman could get a marriage license who could not show a clean bill of health, that of the families on either side there was no constitutional disease, insanity, syphilis. They should bring a clean bill of health before the marriage license should be issued to them.

Again, cripples, hunchbacks, and those unfortunates whose physical system is crippled and incapacitated for self-support, should be subjected to a rigid personal inspection, and unless they could furnish ample authority as it were, or information that they were capable of protecting themselves, and raising families without throwing an additional burden on the State, the right to propagate their species should be denied. It will be asked, how are you going to protect yourselves? That has not been answered yet and I do not think will be any time in a reasonable expectation of the future, but there is no doubt in my mind that if parents and guardians were called upon to subject a man or woman who proposed to enter their family to a rigid examination of family history, that a vast deal of misfortune could be avoided. The criminal classes must be dealt with in a similar manner. You gentlemen have heard something of the history of the Juke family, where one vagrant woman furnished a progency of 200 odd criminals, and cost the State of New York upwards of $7,000,000. Have such people the right to live? It seems to me that the safety of the public demands, if they are not exterminated, they should be at least kept under retention, and such portions of their organism as would perpetuate the breed should be removed. It was in 1867 that Andrew Jackson, the President of the United States, at a meeting in Knoxville, Tennessee, by men who had charge of the criminal institutions of the country, boldly proclaimed that all the criminals should be castrated, the women spayed, and held in some penitentiary, and in that way prevent the propagation of that class.

Again young people under the influence of passion rush into the matrimonial connection, and the result is that thousands and tens of thousands of helpless creatures are thrown a burden upon society, and those who see those things in the large cities become hopeless in despair of the future. I took up a newspaper yesterday and in it saw a poem written by some good and generous human lady that struck me with some force, and I could not help sympathizing with her:

ON READING DANTE'S "INFERNO."

I too have been through hell, O Florentine;
Seest thou not by my visage it is so?
Bears it not still the impress of the woe,
The sin, the suffering, that mine eyes have seen?
Could any walk with countenance serene,
That once the anguish of such sight did know—
That through such paths in retrospect might go?
Canst thou not read it in my altered mein?

The voice of humankind throughout the years
Robs feast and dance and carnival of mirth,
And blurs for me the sunshine of the day,
I catch in laughter the sad sound of tears.
So that of me, as once of thee on earth,
"Lo, who hath been in hell," the people say.

This is an abject conception of the horrible sights of misery and woe and vice and crime that come under the inspection of people whose business it is to see those things. We, the medical men of the country, the plain country doctors, visit always and see all manner of sights of woe and sin and misery. Time and again do I think, will there ever be an end of this, when sin and sorrow will be banished from the earth? That it will come sooner or later I firmly believe, but it will not come until the same care is exercised in the breeding of the race that there is in domestic animals, and when this is done and we can step from the heights of transcendentalism and apply the same laws to heredity that we apply to animals, I think if the millenium does not come, we will have a much better world than it is now.

Annual Report of the Secretary of the North Carolina Board of Health.

THE work of the Board, since my last report, in addition to the regular routine of the Secretary's office, made up chiefly of advice on sanitary subjects to individuals, municipalities, corporations, and health officers in person, by letter, and by telegram, and the preparation of matter for the monthly Bulletin, has consisted in inspections of some of the State institutions, the holding of the annual health conference with the people, and the effort to direct, as far as our powers permitted, the management of the epidemic of smallpox, which I regret to say has prevailed quite extensively throughout the State during the past year.

INSPECTION OF STATE INSTITUTIONS.

Inspections by committees from the Board, appointed by the President, have been made of the three Hospitals for the Insane, the University, the Normal and Industrial College, the two Agricultural and Mechanical Colleges, the school for the Deaf and Dumb at Morganton, and, at the special request of his Excellency, the Governor, of the abandoned convict camp at Castle Hayne, with a view to its healthfulness for that purpose. With the exception of the State Normal and Industrial College at Greensboro, we found all the institutions in a good sanitary condition, although a more abundant water supply is needed at the University.

Learning that the Board of Trustees of the Normal and Industrial College would meet before the report of the regular Committee of Inspection could reach them, I felt it my duty to make a personal visit to that institution and supplement the investigation already made, so that I might be in a position to advise directly with the Board. I was invited to appear before the Board and make to them a verbal report of my investigations, and to give them my views as to the situation. Having done this, I was requested to prepare a full and candid report, suppressing nothing, and give it to the leading newspapers of the State. This was promptly done, and sent to all the morning

dailies in the State. It was also printed in the *Bulletin*, and as every physician whose address is known receives regularly a copy of that publication, you have already read it, or have had an opportunity to do so, at any rate, and it would therefore, be superfluous to repeat it here. After this report was given to the newspapers, I made two other visits to the Normal and Industrial College, and learned certain additional facts which confirmed the view first expressed, that the cause of the outbreak of typhoid was the water of the central well which was drunk by all the students taking their meals in the College, to whom the sickness was limited, and which was found by two bacteriologists, Drs. Albert Anderson, of Wilson, and A. C. Abbott, of Philadelphia, to be infected with intestinal bacilli. These new facts were set forth in a supplementary report, which was printed, together with the original report, in the Bulletin for December, 1899. The medical report of the fever by Dr. W. P. Beall, of Greensboro, the chief consultant, was given to the profession through the columns of the *Carolina Medical Journal*, and was reprinted in the Bulletin for February.

In round numbers, one-third of the total college population had fever, and there were fourteen deaths. As every county in the State had a representative in the student body, and most of them one among the sick, the deep solicitude and widespread interest felt throughout the State, not only in that particular outbreak, but in the subject of typhoid fever in general, its causation and its prevention, can be easibly understood. Realizing this, I availed myself of the opportunity to "point a moral" at the conclusion of the report referred to in the following words:

"Every city and town should have an expert inspector of plumbing, and require inspection by him of every job before it is covered up and accepted, and all public institutions and other establishments with plumbing should require a similar inspection. Wells near sewers, or any accumulation of filth, especially of human origin, are dangerous. Guard with jealous care the purity of your drinking water."

Whether any of our cities and towns have acted upon the suggestion as to the enjoyment of an expert inspector of plumbing, and the requirement that all plumbing work should be inspected and approved by him before being accepted, I have not been

informed, but the suggestion as to drinking water did bear some fruit. The University and the Agricultural and Mechanical College for whites, of the State schools, and St. Mary's, at Raleigh, and the Horner Military School at Oxford, of the private educational institutions, had bacteriological examinations made of their water supplies, thereby exhibited a progressive and enlightened spirit that is worthy of commendation, and setting an example that it would be wise for others to follow.

While the outbreak of typhoid fever at the Normal and Industrial College is greatly to be deplored, its educational effect upon the people has been great, and the final result in the coming years will no doubt be the saving of many more lives than were lost. The history of sanitary science shows that no material advance in its practical application has ever been made, except as a consequence of some tragedy of this sort.

THE HEALTH CONFERENCE.

In the hope of interesting and instructing the people of some of our largest cities and towns in matters pertaining to the public health, meetings of the Board with the people for the purpose of discussing before and with them, in a practical and popular way, sanitary subjects, were inaugurated at Salisbury in 1893. Since that time similar meetings have been held in order at Washington, Charlotte, Goldsboro, Winston-Salem, and Wilson. We have been assured that they were helpful in promoting the cause they were designed to serve, but it must be confessed that appreciation by the people of these efforts on the part of the Board has not increased, the first two having been the most successful. It is true that rival attractions of a more entertaining character have interfered on three occasions, and they may have been the explanation of the comparatively small attendance, although it has invariably been excellent in quality and respectable in numbers. It certainly cannot be attributed to a falling off in the quality of the work done by the members of the Board participating, as the papers and addresses were never better, if so good, as those presented at the last conference at Wilson, the announcement and programme of which was as follows:

HEALTH CONFERENCE AT WILSON, NOVEMBER 1, 1899.

AIMS AND OBJECTS.

The Conference is intended to be between the members of the State Board of Health and the people. Its object is to interest the people in sanitary matters by explaining and impressing upon them the great importance to the individual and to the community of a strict observance of the laws of health. Its proceedings will, therefore, be not technical but popular in character, and everyone present will be invited to participate therein, by taking part in the discussions and by asking questions, which the members of the Board will take pleasure in answering to the best of their ability.

As the enforcement of sanitary rules in the family is largely in the hands of the mistress of the household, the ladies are especially invited to attend.

Papers or addresses are promised on the following subjects:

Old age and How to Attain it.—By Dr. J. L. Nicholson, Richlands, member of the Board.

Vaccination as an Economic Measure.—By Dr. Henry H. Dodson, Milton, member of the Board.

Malaria and Mosquitoes.—By Dr. Richard H. Lewis, Raleigh, Secretary of the Board.

A Discussion of the Health Laws now Operative and Reasons why they Should be Earnestly Supported by the Public.—By Dr. George G. Thomas, Wilmington, President of the Board.

The North Carolina Health Law and the Local Health Officer.—By Dr. Henry W. Lewis, Jackson, member of the Board.

Practical Hints on Drinking Water.—By Dr. W. T. Pate, Gibson, one of the Bacteriologists to the Board.

There will be a Question Box, and persons in the audience too modest to speak out in meeting can write them out and deposit them in the same for answer by some member of the Board. Opportunity will be given for this at the end of the discussion of each set subject.

The meetings will be held in the court house at 10 a. m. and 7:30 p. m.

You are cordially invited to attend and bring your friends.

RICHARD H. LEWIS,
Secretary.

N. B.—The subjects will not necessarily come up in the order in which they appear above.

In view, however, of the sacrifice in time and labor required of the members of the Board, and the expense incident to the meetings, it is a question as to whether they should not be discontinued. An expression of opinion by members of the profession outside of the Board would be welcomed.

COUNTY SUPERINTENDENTS OF HEALTH.

In planning the construction of our health laws, the County Superintendent of Health was made what might be called the corner-stone. While the State Board is, in a general way, in charge of all matters relating to the public health, it has only advisory powers, and the actual practical work must be done by the superintendent. In a word, a county without a superintendent has no sanitary organization, and the health laws cannot be applied to its people. In spite of every effort, until recently, a considerable number of counties have utterly ignored the law commanding them to elect a superintendent. For years the number of counties having superintendents was less than 70, then by special effort it was raised to eighty-odd. At the time of our last meeting there were eleven counties having no health officer. The Board, at a meeting held at the time of the Conference at Wilson, realizing their utter helplessness in case of the introduction of small-pox, which they anticipated would become widespread, instructed its secretary to write to every county commissioner in the derelict counties individually, calling attention to these facts, and urging the importance of the immediate election of a superintendent. The secretary was also instructed to write to the judge holding the nearest court in said counties, asking him to charge the grand jury on our health law, and to suggest the indictment of the commissioners refusing to perform their duty. At the same time, a letter to every commissioner in the State setting forth the importance of making preparations for the probable appearance of smallpox, was ordered. I wrote to one judge, but whether he acted upon our request or not, I have

never learned. The letters were sent to the commissioners, and eight new superintendents were elected, so that now only three counties—all very small—Camden, Pamlico, and Tyrrell, have no health officer. The value of this official is coming to be more and more appreciated every day, thanks chiefly to smallpox, and it is to be hoped that in time, he will be adequately remunerated for his services. Some counties, I am glad to say, have shown a disposition to do this by paying the superintendent $10 a day when engaged in smallpox work, although it must be admitted that many pay less, and that many add nothing to the mere pittance.

THE OUTSIDE INSANE.

While the insane constitute a class of their own under the special care of other guardians, they cannot be properly ignored in a general consideration of the public health. Although our State has made generous provision for these unfortunates in three well-equipped and admirably managed hospitals, the present accommodations are not adequate for the care of all who need it. Basing an opinion upon the recent excellent report of the State Board of Public Charities on this subjebt, which gives the number of insane, epileptics and idiots located at 766, it is not unreasonable to assume that there are at least one thousand of these stricken ones in jails, county homes and private families. It would be a work of supererogation to detail to a body of medical men, who are only too familiar with such sad sights, the horrors of the situation of many of them. No matter how good the intentions of their keepers may be, they cannot obtain the care and attention to which, as a matter of simple humanity, they are entitled, owing to the lack of facilities and of knowledge and experience in this particular kind of work on the part of those in charge. By a comparatively inexpensive amplification of our three State hospitals, all of the insane and most of the epileptics could be given expert care and treatment at a cost, in the aggregate, very much less than that incurred under the present system. It is to be hoped that the next Legislature will take action in this matter, and as our law-makers are largely influenced by public opinion, it seems to me that the adoption of a resolution setting forth the views of this body, which represents the medical profession of the State would be in order.

PURE FOOD AND DRUG CONGRESS.

By appointment of the President I attended, as a delegate from this Board, the third annual session of the National Pure Food and Drug Congress, which was held at Washington, March 7–9. The meeting was largely attended by representatives of all the interests involved from all parts of the United States. After a very full discussion of the relative merits of two bills setting forth the objects sought, which had been introduced in the House of Representatives by the Honorable Messrs. Brosius and Babcock, respectively, it was decided that the Brosius bill was the more satisfactory, and it was adopted as embodying the views and wishes of the Food Congress. The outlook for desirable legislation on this line is said to be favorable, if action can be obtained at this session. I would, therefore, respectfully suggest that a resolution calling attention to the importance of the subject, and asking the support of the Brosius bill by our Senators and Representatives in Congress be adopted by the conjoint session and forwarded to them at once.

SMALLPOX.

The history of smallpox in the State for the past twelve months has been an almost exact repetition of that of the preceding year, in every respect, except the number of cases, which has been nearly five times as great.

An exact comparative statement is as follows:

From January 12, 1898, to May 1, 1899—Number of cases (in 38 counties), white, 162; colored, 454; total, 616.

Number of deaths, white, 8; colored, 9; total, 17.

Death rate, per cent., white, 4.93; colored, 1.97; total, 2.76.

From May 1, 1899, to May 1, 1900—Number of cases (in 55 counties), white, 731; colored, 2075; total, 2,806.

Number of deaths, white, 35; colored, 30; total, 65.

Death rate, per cent., white, 7.78; colored, 1.44; total, 2.31.

From this statement it appears that the proportion between the two races is almost exactly the same, the number of colored attacked being nearly three times as large as the number of white in both periods. The death rate has remained also nearly the same—a trifle less—the decrease being slightly more marked in the colored race.

The character of the disease has, as a rule, been very mild, and from that fact have arisen nearly all the difficulties in the management; the indifference, and often positive opposition, on the part of the people to vaccination; the reluctance of the authorities to institute and support effective measures of prevention; and the mistakes in diagnosis, including the disastrous effect upon public opinion of the efforts of some of the physicians making the mistakes to support their position. From the last of these three things has come the chief trouble. The matter has been so fully discussed in various issues of The Bulletin during the year that I will not weary your patience by a repetition of it, but will merely cite two instances: the counties of Guilford and Rockingham. In both these counties the disease was diagnosed chickenpox by the attending physician, and in the latter the position was persisted in, notwithstanding the opinion to the contrary of an expert. In consequence, the proper precautions were not promptly taken, and the result was, in Guilford 509 cases with nine deaths, and in Rockingham 520 cases with 20 deaths, to which should be added the direct cost to the counties of thousands of dollars in handling the widespread epidemics, and the loss of tens of thousands in trade. In justice to the Superintendents of both these counties, it should be said that the harm in the way of numberless exposures of unvaccinated persons was done before the disease was reported to them as smallpox, when only their responsibilities began. I have no reason to believe otherwise than that they are both good men, and efficient health officers.

The work of our inspectors, Drs. Joshua Tayloe, of Washington, and L. Harrill, of Statesville, whose reports are attached, has been of great value in settling disputed diagnoses, instructing Superintendents new at the business, impressing upon the authorities the gravity of the situation, and explaining the best way to meet it.

In response to special requests from Greensboro, Winston, and High Point, for a United States expert, I asked Surgeon-General Wyman, of the Marine Hospital Service, to send one of his men to those points. He promptly granted my request, and sent Passed Assistant Surgeon Wertenbaker, whose efforts were of material aid in setting public opinion right, and in inaugurating the proper precautions.

Upon the occurrence of a case of suspected smallpox in one of the students I personally visited the University, at the request of President Alderman and Dr. Whitehead. I confirmed the diagnosis of smallpox already made by Dr. Whitehead, endorsed the precautionary measures already planned and in part inaugurated and addressed the student body, particularly upon the value and importance of vaccination. The entire absence of panic among the 500 students, and the failure to spread from the first case under such circumstances, is sufficient testimony to the admirable management of those in charge there. I also personally visited Reidsville, at the urgent and repeated request of Superintendent Ellington, to aid him in securing the co-operation of the County Commissioners with those of the town. I addressed both bodies in joint session, and was much gratified to learn that the County Commissioners took action in the manner desired immediately upon adjournment, and to be assured since that my visit was really helpful.

Owing to the extreme mildness of the disease in many instances, no physician has been called in, and absotutely no precautions in the way of disinfection have been taken. This means, of course, a great many *foci* of infection for time to come. According to the reports of the Superintendents, hardly more than ten per cent. of the people have been vaccinated on an average, though it should be said to the honor of this county of Edgecombe, whose hospitality we are now enjoying, that she heads the list in this good work with eighty per cent. of her entire population, rural as well as urban, vaccinated. The conclusion from these two facts is inevitable. There must be a recrudescence of smallpox next winter, unless the people are generally vaccinated between now and then on a much more extensive scale. Since the decision of the Supreme Court, in State Appellant *vs.* W. E. Hay, from Alamance, affirming the right of county and municipal authorities to enforce compulsory vaccination—a copy of which opinion, delivered by Justice Clark, was printed in the March *Bulletin*—there need be no trouble about it. The responsibility rests upon the said authorities. And in this connection, let me say one word as to the duty of the medical profession in the premises. It is clear. They should, without ceasing, teach, preach, and practice vaccination, and cordially support all authorities trying to bring it about.

In conclusion, I would say that the Board of Health, owing to the smallpox epidemic and the outbreak of fever at the Normal and Industrial College, has never been so much in evidence, and, apparently, so much appreciated by the people as during the past year.

Record of Smallpox in North Carolina, from May 1st, 1899, to May 1st, 1900.

Counties.	Cases.			Deaths		
	White.	Colored.	Total.	White.	Colored.	Total.
Alamance	11	51	62	..	..	..
Alexander	12	..	12	..	..	..
Anson	12	18	30	..	..	..
Bertie	3	16	19	2	1	3
Buncombe	27	6	33	..	..	..
Burke	27	34	61	3	..	3
Cabarrus	10	3	13	.	..	..
Caldwell	..	13	13	..	..	..
Carteret	1	..	1	..	..	..
Caswell	8	31	39	2	..	2
Catawba	..	1	1	..	..	..
Chatham	5	90	95	..	3	3
Cherokee	1	..	1	..	..	
Chowan	3	30	53	..	..	..
Cleveland	1	12	13	..	..	..
Craven	..	1	1	..	..	..
Cumberland	..	1	1	..	..	..
Currituck	22	2	24	..	..	..
Davidson	11	34	45	..	1	1
Davie	8	21	29	..	1	1
Durham	2	19	21	.	..	..
Edgecombe	..	1	1	..	..	..
Forsyth	8	4	12	..	1	1
Gaston	..	8	8	..	..	..
Gates	18	100	118	1	..	1
Granville	1	..	1	..	..	..
Guilford	64	445	509	2	7	9
Halifax	12	150	162	..	..	..
Harnett	6	2	8	..	..	..
Haywood	24	8	32	..	..	..
Henderson	..	1	1	..	..	..
Hertford	7	36	43	.	2	2
Iredell	1	..	1	..	.	..
Johnson	15	24	39	..	1	1
Mecklenburg	2	48	50	..	1	1
Moore	16	76	92	1	1	2
Nash	22	24	46	2	1	3
New Hanover	1	15	16	..	..	..
Northampton	..	14	14	..	1	1
Orange	20	24	44	..	..	..
Pender	..	8	8	..	..	..
Person	26	14	40	1	..	1
Randolph	11	7	18	..	..	..
Richmond	..	29	29	..	1	1
Robeson	15	15	30	..	..	..
Rockingham	144	376	520	16	4	20
Rowan	40	130	170	3	4	7
Rutherford	1	60	61	..	..	..
Stanly	1	23	24	..	..	..
Surry	105	12	117	2	..	2
Union	..	8	8	..	..	..
Vance	2	1	3	..	..	..
Wake	5	26	31	..	..	..
Warren	..	2	2	..	..	..
Washington	..	1	1	..	..	..
Total (counties 55)	731	2,075	2,806	35	30	65
Death rate, per cent	....	.....	.....	4.78	1,44	2.31

REPORT OF SMALLPOX INSPECTORS.

REPORT OF DR. TAYLOE.

DR. R. H. LEWIS,

Secretary State Board of Health, Raleigh, N. C.:

SIR—I submit herewith to the State Board of Health the following report of my work as Smallpox Inspector, from May, 1899, to May, 1900. In this report I give the towns, counties, number of cases examined, how managed and by whom. Also what precautions had been taken up to my inspection.

May, 1899—I made a trip to Gates county, this being my first inspection, examined a good many patients suffering from the mild forms of smallpox, two-thirds being white people. There existed in Gates county, at the time of my visit, thirty-five infected houses. No precautions had been taken. No superintendent of health.

May, 1899—I inspected the conditions in Currituck County. Saw six cases, two white and four colored, in charge of Dr. H. M. Shaw, Superintendent of Health. Some precautions have been taken.

June 23, 1899—Hertford County, at Ahoskie, I examined three cases, negroes, in charge of Dr. Tayloe, Superintendent of Health. They were well cared for.

Scotland Neck, Halifax County—Five cases were examined by me, all negroes. More negroes afterwards developed the disease, also some whites. No precautions had been taken until the time of my inspection, as a positive diagnosis was not made until then. Dr. Green, Superintendent of Health, then took charge, and with the assistance of Dr. Wimberly, managed the cases well.

June 3, 1899—Beaufort, Carteret County—Examined one case, white. Well managed by Dr. Frank Clark, Superintendent.

March 29, 1900—Robeson County—Inspected eight cases, five white and three colored. Some precautions had been taken. Drs. McNatt and Utley in charge.

Henderson, Vance County—I inspected one case, white. All necessary precautions had been taken by Drs. Cheatham and Bass, Health Officers.

April 1, 1900—Selma, Johnston County—Thirteen cases were inspected by me, seven white and six colored. Of these two

suffered with confluent type, one died. Moderate precautions had been taken by Drs. Wharton and Noble, health officers of county and town respectively.

April, 1900—Franklin County—Inspected four cases, all colored. Proper precautions were at once taken by Dr. Foster, Superintendent.

Smallpox has existed during this epidemic in all its forms, from the mildest to the most malignant confluent type, as expressed by Dr. Long.

In every town and county in which I made inspections I made reports to the Town and County Commissioners and Local Health Boards, advising them as to the best possible means of stamping out and controlling the disease, without further spread. Also described the full technique of caring for patients and handling suspects, suggesting as thorough vaccination as possible in every section which I visited.

I advocate vaccination because I believe it to be the most powerful means of preventing the disease. I regard vaccine virus as the most active material that can be admitted into the list of our prophylactic remedies, and the only weapon of defence in overcoming the worst of human maladies.

The large majority of smallpox in the State has existed in a very mild type, in fact, the virtue of vaccination has so modified the disease that it is only in exceptional cases we have the opportunity of studying the malignant forms. I have had the opportunity in the present epidemic to examine only a few cases of the malignant forms of smallpox, and I am firmly of the opinion that such types of the disease can only exist in those who are absolutely without history of vaccination, and I mean by that, those whose parents and grandparents have not been vaccinated.

The protective influence of vaccination is so great that, from my experience, I am willing to assert that the vaccinated can only contract the disease by close and continuous contact or exposure. And if contracted then, it is of a mild and modified form.

Respectfully submitted,

JOSHUA TAYLOE, M. D.,
Smallpox Inspector.

REPORT OF DR. HARRILL.

STATESVILLE, N. C., May 19, 1900.

DR. R. H. LEWIS,

Secretary State Board of Health,

MY DEAR DOCTOR:—At your request I hereby submit a statement of visits made by me as Inspector. My appointment was made about the middle of January last.

January 20—I visited New London, Stanly county, where I found seven cases of smallpox, colored.

February 4—At Thomasville I saw two cases, colored.

February 10—At Asheville I saw twelve cases, whites.

February 20 to 22—Near Walnut Cove, Stokes County, saw two cases besides six or eight others recovered, and in the same county, at Pinnacle, saw three cases. A local doctor refused to accept my diagnosis. The leading case, and the one upon which I based my opinion, was in a woman, forty to forty-five years of age, with an eruption about nine days old when I saw her. The cases at Walnut Cove and Pinnacle were all white people.

February 23—I saw one case at Pilot Mountain. I visited Reidsville and saw the celebrated cases in a seminary there. I have been informed that persistent efforts were made by a local physician to discredit my opinion. Repeated vaccinations were made, but without results. I am informed that one of the patients afterwards carried the contagion to her home in some of her clothing, and from this source there were two malignant cases resulting in death. I saw in Reidsville twelve or fourteen cases, but the actual number at that time was probably three or four times as many.

February 24—Visited Hillsboro. Saw two cases.

March 2—Visited Taylorsville and found six cases, all whites. Dr. H. F. Long also saw one of these cases, and confirmed my diagnosis.

March 24—I visited Jonesboro and found six cases in one family, all white. The mother and grandmother in the same house had both been vaccinated when young, and both escaped the disease. I saw one other white man and two negroes with the disease.

April 16—Visited Shelby and found six cases in the same family of negroes. Another family of negro children had chick-

enpox. At Fallston, in same county, I saw one case in a white man. At Mooresboro, one case, a negro man. Near Cleveland Springs, same county, I saw one case, a negro woman.

April 27—Visited Henrietta, Rutherford County, where I saw three cases, all negroes. One case reported at Caroleen, and one west of Rutherfordton that I did not see.

April 30—Visited Spray and saw three cases, all whites, besides several recovered and convalescent cases that I believe were the same disease.

May 1—Visited Madison and found that smallpox had been there four to six weeks. I saw one partly confluent case here. There had been in all about fifteen cases.

May 2—Visited Stem, Granville county, and found one case only developed, but a number of exposures.

This closes my list of visitations. There is a strong prejudice against vaccination, and decided opposition to any restriction or isolation of patients. Also a determination to not believe there is any smallpox in the State. Unfortunately this belief extends to some of the doctors, and when one or more of that kind are in a community it is almost impossible to control the disease. I persuaded one doctor, a non-believer in vaccination, to go with me within thirty or forty feet of a well developed case. After seeing it, he decided that as he was practising in the neighborhood, and had never been vaccinated, he ought to be.

In communities where the disease has been for several months, it is to be feared that there is already, and will continue to be, a relaxation of proper efforts to stamp out the disease.

Public meetings have been called in many places, and I have tried to advise the people about vaccinations. Hoping this imperfect report will be satisfactory, I remain,

Yours, very truly,

L. Harrill, M. D.
Smallpox Inspector.

RESOLUTIONS ADOPTED.

The following resolutions were adopted by the Conjoint Session of the State Board of Health and the State Medical Society:

IN REGARD TO PURE FOOD, BY COL. A. W. SHAFFER.

Whereas, The health of the people is largely dependent upon

the purity of their food and the reliability of their medicine, and is injuriously affected by the adulterations now so common in very many of the articles in daily use; and

WHEREAS, A bill to prevent such injurious adulterations, introduced by the Hon. Mr. Brosius, is now pending in Congress; therefore be it

Resolved, By the North Carolina Board of Health and the Medical Society of the State of North Carolina, in conjoint session assembled, that our Senators and Representatives in Congress be requested to give this measure their prompt and cordial support.

IN REGARD TO OUTSIDE INSANE, BY DR. HENRY W. LEWIS.

WHEREAS, Recent official reports from the State Board of Charities show that there are in North Carolina, uncared for in asylums or other proper institutions, insane, epileptics and idiots to the number of 866, and that there are probably as many more in the State who have not been reported; and

WHEREAS, It is a notorious fact that many of these people are confined in jails and county homes without proper care and attention, and undergo hardships and in many cases maltreatment—which of itself precludes the hope of improvement or recovery from their mental or physical condition; therefore be it

Resolved, 1st. That the paramount consideration is that these patients have proper treatment at the hands of the State of North Carolina, whereby the reproach now resting on us may be removed.

2d. That it being notorious that the State institutions are already overcrowded, we urge the pressing necessity of such early increase of hospital facilities as will insure these proper care and treatment, and to this end we commend the plan referred to by Dr. P. L. Murphy, in his paper read before the students of the A. & M. College at Raleigh, March 16, 1900—said plan being known as "The Cottage System."

IN REGARD TO SMALLPOX, BY DR. S. WESTRAY BATTLE.

The total number of cases of smallpox in the State for the year from May 1, 1899, to May 1, 1900, was 2,806, as against 616 for the fifteen and a half months preceding—from the be-

ginning of the epidemic on January 12th, 1898, to May 1st, 1899, an increase of 455.5 per cent. This means innumerable foci of infection, which in an indefinite number of instances, owing to entire neglect or imperfect practice of disinfection, are and will continue for months or years still active. Reports from Superintendents of Health show, on an average, about 10 per cent. only of the people as being vaccinated. The people seem to be generally indifferent or actively opposed to vaccination. The authorities, county and municipal, except in the actual presence of smallpox, do not appear to realize the gravity of the situation and the dangers which menace their people. In view of these facts, be it

Resolved, By the North Carolina Board of Health and the Medical Society of the State of North Carolina, in conjoint session assembled, that it is their opinion that in the present conditions the continued spread of smallpox is inevitable, with the strong probability of its reaching pestilential proportions during the coming winter, smallpox being much more virulent in cold weather;

The quarantine and disinfection in the present state of public opinion, and in view of the lukewarm support, to say the least, too often given the health officer, cannot be depended upon to prevent the spread of the disease;

That the thorough and complete viccination of all the people is alone adequate to meet the situation;

That this, in most instances can only be accomplished by compulsion, legal authority for which has been affirmed in the recent decision of our Supreme Court in State vs. Hay;

That we feel it to be our duty to notify the people of these facts, and the grave dangers which threaten them, and to call upon those who represent their interests, the various boards of county commissions, boards of city aldermen and town commissioners to take at the earliest practicable moment the necessary steps to secure the vaccination of the people, and we urgently appeal to our professional brethren throughout the State, individually, as well as collectively, to render every aid in their power, by both word and act, to the accomplishment of this most important object.

A resolution in favor of establishing the Appalachian Park

was introduced and adopted, and copies ordered sent to our Senators and Representatives.

The resolution was as follows:

To the Senate and House of Representatives of the United States of America:

WHEREAS, It having come to the knowledge of The North Carolina State Board of Health and The North Carolina State Medical Society that there is now a movement on foot under the auspices of the Appalachian National Park Association for the establishment of a National Park and Forest Preserve in the Southern Appalachian Mountains, preferably in the Western North Carolina Section or adjacent States, to be known as the Appalachian National Park, and

WHEREAS, Those interested in this movement having presented a Memorial to Congress of the United States praying for the appointment of a Commission to investigate the practicability, feasibility and necessity of establishing such a Forest Reservation and Park in the Southern Appalachian Mountains, and

WHEREAS, The Committee on Agriculture, of the Senate, to whom this matter was referred, having reported back to the Senate favorable upon the appointment of such a Commission, and the Senate of the United States having passed the Amendment as reported by the Agricultural Committee, and

WHEREAS, We believe that the cause of this Association is one deserving of the most careful attention at the hands of the Government; therefore be it

Resolved, That the North Carolina State Board of Health and the North Carolina State Medical Society endorse the movement of the Appalachian National Park Association, and that we earnestly urge the Senate and House of Representatives of the United States to obtain the careful investigation and report as requested in the Memorial set forth by the Appalachian National Park Association.

The Society then adjourned to meet at 2:30 p. m.

SECOND DAY—AFTERNOON.

Society called to order at 2:30 by the President.

Committee on nominations made the following report, which was adopted:

Report of the Committee on Nominations.

For Orator, Earle Grady, Tryon; Essayist, R. S. Primrose, Newbern; Leader of Debate, D. A. Staunton, High Point.

Committee on Publication.

J. C. Montgomery, Charlotte; R. L. Gibbon, Charlotte; George W. Pressly, Charlotte.

Obituary Committee.

D. J. Hill, Lexington; W. T. Cheatham, Henderson; J. C. Rodman, Washington.

Delegates to American Medical Association.

Chas. O'H. Laughinghouse, Greenville; H. B. Weaver, Asheville; Julian M. Baker, Tarboro; Charles L. Pearson, Asheville; J. P. Munroe, Davidson; Charles S. Mangum, Chapel Hill; W. H. H. Cobb, Goldsboro.

Delegates to South Carolina Medical Society.

C. M. Poole, Craven; J. L. Edgerton, Hendersonville; David Bullock, Wilmington; A. H. Harris, Wilmington.

American Public Health Association.

H. H. Harris, Wake Forest; S. W. Battle, Asheville; P. L. Murphy, Morganton; G. G. Thomas, Wilmington.

Virginia Medical Society.

H. H. Dodson, Milton; J. W. Long, Salisbury; R. H. Stancil, Margarettsville; R. H. Whitehead, Chapel Hill; B. K. Hays, Oxford.

H. W. Lewis,
J. A. Burroughs,
W. C. Galloway,
Willis Alston,
Chas. A. Julian,
Nominating Committee.

Dr. E. T. Dickinson presented a paper on "Abortion."

The discussion of Dr. Carr's paper, postponed from the morning session, was taken up by Drs. Staunton, Summerell, Oscar McMullan, Julian, and was closed by Dr. Carr.

The Society then went into the election of officers for 1901.

Dr. Julian M. Baker, of Tarboro, was nominated for President by Dr. McMullan, and on motion of Dr. Lewis the rules were suspended and the Secretary cast the vote of the Society for Dr. Baker.

Dr. M. H. Fletcher was nominated and unanimously elected 1st Vice-President; Dr. C. A. Julian, of Thomasville, 2d Vice-President; Dr. D. A. Stanton, of High Point, 3d Vice-President; Dr. E. M. Summerell, of Mill Bridge, 4th Vice-President.

Dr. G. T. Sikes was re-elected Treasurer, and Geo. W. Pressly, Secretary.

Ballot was then taken on the place of next meeting, and Durham was selected and the choice made unanimous.

The time was left with the Local Committee of Arrangements, the President and Secretary.

Dr. J. T. Beall, of Linwood, was made an Honorary Fellow of the Society.

Dr. Carl V. Reynolds presented a paper on "Tuberculosis," which was discussed by Drs. Weaver and Dunn, and closed by Dr. Reynolds.

The question of the necessity of an official organ of the Society came up for discussion.

Dr. W. L. Dunn: Pointed out the injustice to the other medical journals of the State that one should be adopted as the official organ of the Medical Society and moved that the Medical Society of the State of North Carolina recognize no journal as its official organ. This motion was seconded by Dr. McMullan.

Dr. Long: I have been a member of the Society more years than I can hope to be in the future. I have the highest consideration and respect for every member of the North Carolina Medical Society, and I have aspired to deserve and hope to deserve in the future even more than in the past this respect, but I would have been glad if this question could have been brought up when there was a fuller meeting, because I recollect the struggle of this body more than twenty years ago when it went from place to place and found a lodgement in the homes and affections of the people from the gorges of the mountains of the west to the cypress swamps of the east, and I knew Dr. Wood, who edited the North Carolina Medical Journal, for it existed before the war, and I have some copies of it in my library. Dr.

Wood was a man of merit and gave us as good a journal as a man could give in North Carolina in his day for the same amount of money. We do not know how many medical journals are going to spring up in North Carolina in the next quarter of a century. Of course this Society has got to be kept alive by the young men, so that the generation that is to follow may look on our work and think well of it, but above all, whatever we do, it should always be characterized by moderation and justice so that we ourselves will think well of what we have done. Now I say this because I have no objection to the motion in the world, the only thing about it is I would like to have a larger body present, and then there would have been no grounds for complaint. I am sure I do not mean to question the motive of anybody; far be it from me, but I do not see any great urgent necessity for acting in a hurry. If those who represent that journal and the friends of it were present or had an opportunity to be present and you passed it, it would be our duty to acquiesce, but if we take action, where this has been in existence for a quarter of a century, it seems to me our conduct might be misconstrued. I hope you will think about it, and I am sure you will do what you think is right and proper.

Dr. Register: I think the official organ as it now exists is entirely unnecessary. It gives an advertising advantage, and I think it unfair, and I would favor this movement. I appreciate what you say about having a representation here. The official organ of the Society should certainly be represented.

Dr. Long: If the Charlotte Medical Journal, or any medical journal, had been endorsed for 25 years by this Society, and the present journal was to ask for it to be discontinued, I would feel that we ought to proceed in such a way as not to leave anything like a reflection on it. That is all that I wish; I have no interest in it one way or another, but I have followed it through its ups and downs to the present, and if it is the wisest and best for this Society to abolish that rule and wipe it from the record, why do it. All that I am pleading for is to proceed in such a way as not to offend any unit of this Society, or the Society collectively. I am just as much interested in anybody that represents any journal and in their welfare, and the Society is and ought to be, but we cannot afford to hurt any of our units or leave anything like a sting.

Dr. Marsh: I rise to say that you express the feeling of the masses of the Society and at the same time it would be more satisfactory to set an hour for this question to come up to-morrow morning, or immediately after supper, and let us have a free and full discussion of the question and settle it in the best way. So far as I am concerned my wishes are for the good of the Society. I would regret very much to be a party to any action that would cause any friction or feeling in the Society, and I offer as a substitute to the doctor's motion, that this motion be brought up immediately after supper.

Dr. R. H. Lewis: I would like to know what is up?

Dr. Long: There is a motion to abolish the relationship of the Society to the Carolina Medical Journal as its official organ, and it received a second, and now we have an amendment offered to that motion, postponing the matter until to-night, until just before the annual essay, and the amendment has received a second. The same thing was brought up at Charlotte.

Dr. Register: I think all of the journals of the State should be on an equal footing.

Dr. R. H. Lewis: It seems to me that it would not be fair to take action now. I think the suggestion that it be postponed to a definite hour a good one. What we desire to avoid above all things is factional strife, and we must do everything we can to prevent it. It seems to me that the motion is the right thing, except that instead of being the first thing, it should come between the essay and the oration, so I would endorse the amendment to postpone for further consideration until immediately after the reading of the essay to-night.

Dr. Sikes: I feel very much like quite a number of you gen-gentlemen feel about it, and that is to take any action upon any matter of very considerable importance when the friends of the matter were not present looks like we were trying to take undue advantage of them, and the *North Carolina Medical Journal* has not a single representative here to-day, so far as I know, and I think it would be better if the gentleman who introduced this resolution would bring up a written resolution and let it lay over until one day during the meeting next year. There is not the slightest doubt in my mind as to how the matter will be settled, yet I do not think we ought to take unfair advantage of a weaker

organ. I do not think we ought to have an organ, but at the same time I do not think this would be treating the *Journal* exactly fair.

Dr. Dunn: I am very heartily in accord with the idea of considering the question when there is a fuller attendance than at present. I expected to put the motion this morning, and I am most thoroughly in accord with the amendment and the substitution as offered for consideration when there is fuller attendance.

Dr. R. H. Lewis: I offer as an amendment the postponing of this matter until 10 o'clock on Wednesday of the next annual meeting, when everybody will be present and it may be considered. We have two journals in our State of equal value, and I do not like to have any favor, and at the same time those of the older members who remember the labors of Dr. Thomas Wood naturally have some sentimental feeling about it. Still in the interest of fairness and harmony, and to prevent these factional fights, I think we should give full notice when the members of the Society will be present, and then nobody can complain.

Dr. Marsh: I withdraw my amendment in favor of Dr. Lewis.

Dr. Register: I am in favor of Dr. Lewis' motion, that this matter be postponed until 10 o'clock on Wednesday of the next meeting.

Dr. Carr: I introduced a motion like this in Charlotte once and they told me I would have to put it by a resolution.

Dr. R. H. Lewis then put the following resolution:

Resolved, That the consideration of the question of the abolishment of the *Carolina Medical Journal*, as the official organ of the Medical Society of the State of North Carolina, be made the special order for 10 o'clock on Wednesday of the next annual meeting of the Medical Society. Carried.

The committee on the President's Address made their report as follows, which was adopted:

Your committee appointed to report upon the President's excellent and practical address respectfully beg leave to cordially endorse his recommendations and to suggest the adoption of the following resolutions:

Resolved, That Anatomy being one of the fundamentals of

medicine and surgery and the proper teaching of that branch being impossible without dissections of the human body,arrangements should be made for providing subjects to our medical schools. That to secure that end the Committee on Legislation be requested to use its best efforts to obtain the enactment by the next General Assembly of a suitable dissecting law.

Resolved, That in view of the fact that vivisection is necessary to the scientific study of medicine and is responsible for many of the wonderful advances of modern medicine, the Medical Society of the State of North Carolina earnestly protests against any restrictive legislation on this line and it requests our Senators and Representatives in Congress to oppose, in the interest of science and humanity, the Gallinger bill now pending in the Senate of the United States.

Resolved, That no health board can do really effective work without the cordial co-operation of the family physician; and we call upon not only our own members but every medical man in North Carolina to heartily support the efforts of all health officers to protect the public health, and in addition instruct the families belonging to their clientele in the elementary principles of hygiene.

R. H. Lewis,
W. C. Galloway,
J. L. Nicholson.

On account of the illness of the writer, the paper of Dr. C. M. Hazen was referred to the Committee on Publication.

Several papers, in the hands of the Secretary, the authors being absent, were referred to the Committee on Publication.

The Society then adjourned to meet at 8:30 p. m.

Second Day—Evening.

The Society was called to order by the President at 8:30 o'clock.

Dr. R. H. Whitehead, of Chapel Hill, presented the Annual Essay on "The Relation of Bacteria to Disease."

Dr. T. S. McMullan then delivered the Annual Oration on the subject, "Watchman, Tell us of the Night."

The traveling men of the city having exhibits in connection with the meeting presented to Dr. Julian M. Baker, Chairman

of the Local Committee of Arrangements, a very handsome case of surgical instruments.

On motion of Dr. Lewis the Society went into the installation of officers.

The President appointed Drs. W. H. Whitehead and R. S. Young to escort Dr. Baker to the platform.

The retiring President, Dr. Geo. W. Long, welcomed Dr. Baker to the chair in a few well chosen words, and expressed his thanks to the people of Tarboro for the hospitality of their homes and hearts shown the Society.

President Baker thanked the Society for the honor conferred on him, and asked the co-operation of all members in maintaining the high standard of the work of the Society.

It was moved that the President be allowed to appoint his committees for the coming year and announce them later. Carried.

On motion by Dr. Sanderford, a vote of thanks by the Society was extended to the citizens of Tarboro for the cordial way in which the Society was entertained.

The Committee on Credentials reported favorably on the following persons who were admitted to membership in the Society:

W. N. Tate, Mebane; H. Hartwell Bass, Henderson; E. F. Corbell, Sunbury; S. E. Koonce, Pollocksville; L. L. Staton, Tarboro; E. J. Buchanan, Lexington; R. E. Lee, Clinton; W. W. Dawson, Grifton; C. F. Griffin, Woodland; R. P. Morehead, Lasker; A. R. Winston, Franklinton; Raymond Pollock, Kinston; Isaac W. Lamm, Lucama; Elizabeth Delia Dixon, Raleigh; Sallie Borden, Goldsboro; Edmund Harrison, Greensboro; Wade H. Bynum, Germanton; J. B. Person, Jr., Selma; E. T. Dickinson, Smithfield; J. R. Palmer, Hookerton; W. L. Dunn, Asheville; L. Harrell, Statesville; Paul Paquin, Asheville; J. E. Patrick, Institute; J. C. Wessell, Wilmington; E. J. Nixon, Wilmington; A. C. Hoyt, Washington; J. W. Tayloe, Union; J. W. Wood, Scotland Neck; B. F. Halsey, Roper.

The following delegates and visitors were welcomed and extended the courtesies of the floor:

Joseph H. Branham from Maryland; E. F. Darby from South Carolina; Southgate Leigh from Virginia; Randolph Winslow

from Baltimore; F. A. Ashby from Baltimore; H. C. Spruill from Baltimore.

JULIAN M. BAKER,
L. J. PICOT,
R. H. WHITEHEAD,
Committee.

The Society then adjourned *sine die*.

GEO. W. LONG,
President.

GEO. W. PRESSLY,
Secretary.

CONSTITUTION.

ARTICLE I.

TITLE OF THE SOCIETY.

The name and title of this Society shall be "The Medical Society of the State of North Carolina."

ARTICLE II.

OBJECTS OF THE SOCIETY.

The objects of this Society shall be the advancement of medical knowledge, the elevation of professional character, and the promotion of all measure of a professional nature that are adapted to the relief of suffering humanity, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS OF THE SOCIETY.

SECTION 1. This Society shall consist of Active and Honorary Members, and Honorary Fellows.

SEC. 2. The Active Members shall consist of such regular physicians as have complied, or shall comply with the laws of the State, ratified February 28, 1889, and shall receive the approval of the Committee on Credentials and a two-thirds vote of the members present at the meeting at which their applications for membership are presented. They shall be required to sign the Constitution and By-Laws of the Society, pay an initiation fee of five dollars, and shall be liable for such dues for defraying the expenses of the Society as the Society may, from year to year, agree upon.

SEC. 3. The Honorary Members shall consist of such regular physicians as have won distinction by their contributions to medical science; those elderly physicians who, prior to their retirement from practice, have displayed a proper interest in the welfare of this Society, or who, by their example, have reflected credit and honor upon the profession. They must receive a two-

thirds vote of the members present at the meeting at which their names are presented for election. They shall be exempt from all dues and fines and shall be entitled to all the privileges of the Society except the right to vote and hold office.

SEC. 4. The Honorary Fellows shall consist of such physicians as have been members of this Society for thirty years, and whose dues have been paid during that time. They shall receive a two-thirds vote of the members present at the meeting at which their names are proposed for promotion. They shall be exempt from all dues and fines and shall be entitled to all the privileges enjoyed by active members in good standing.

ARTICLE IV.

OF THE OFFICERS.

SECTION 1. The officers of this Society shall be a President, four Vice-Presidents, a Corresponding and Recording Secretary and a Treasurer.

SEC. 2. They shall be elected by ballot, on the afternoon of the second day of the meeting, a plurality of votes cast being sufficient for election, and shall serve for one year, except the Secretary and Treasurer, who may serve three years, or until his successor is elected.

SEC. 3. Any nominee for the office of President shall have been an active member of the Society for five years, including the year of his election, shall have attended two or three meetings immediately preceding his nomination, including the meeting at which he is nominated; and shall be a member in good standing at the time of his nomination.

ARTICLE V.

DUTIES OF THE OFFICERS.

SECTION 1. The President shall preside at the meetings, preserve order and perform such other duties as pertain to his office. He shall not be eligible for a second term.

SEC. 2. The Vice-Presidents, in the order of their rank, shall assist the President in the performance of his duties, and during his absence, or at his request, shall officiate in his place. They shall not be eligible to two terms in succession.

SEC. 3. The Corresponding and Recording Secretary shall conduct the correspondence of the Society, and shall be custodian of all papers belonging to the Society, except such as appertain to the Treasurer. He shall keep correct minutes of the proceedings of the Society, and shall place them in the hands of the Publication Committee within thirty days after the adjournment of the Society. He shall advertise in two of the leading papers of the Stats a month in advance all meetings of the Society; and shall, at the same time, mail to each member a notice of the time and place of the meeting, and shall perform all such other duties as usually appertain to his office. He shall receive such compensation as the Society may, from year to year, agree upon.

SEC. 4. The Treasurer shall receive all moneys belonging to the Society, and disburse them as directed, preserving vouchers for the same. He shall present annually a statement of the finances of the Society, which shall be referred to a committee of three members, who shall audit the same and report to the Society. He shall receive such compensation as the Society may, from year to year, agree upon.

ARTICLE VI.

OF THE BOARD OF MEDICAL EXAMINERS.

SECTION 1. The members of the Board of Medical Examiners shall be elected by ballot for a term of six years, a majority of the votes cast being necessary to a choice. The election shall be held at 10 o'clock a. m., on the second day of the annual meeting, and the balloting shall continue until the entire number of seven are elected.

NOTE.—In order to accomplish the change from the present method of electing a portion of the Board every two years to that of electing the whole number at one time without curtailing the term of office of those already elected, it is decreed that the two members to be elected in 1898 be elected for four (4) years, and the two members to be elected in 1900, for two (2) years, after which this note having served its purpose shall be considered as repealed without further action on the part of the Society.

SEC. 2. A vacancy occurring from any cause other than

expiration of term of office, shall be filled by the Board or a quorum thereof.

ARTICLE VII.

OF COMMITTEES AND THEIR DUTIES.

SECTION 1. A committee of three members to be known as the Committee on Credentials shall be appointed by the President at the morning session of the first day of each meeting. Their duty shall be to investigate the character and standing of all applicants for membership in the Society, and receive the credentials of any delegates from other State or District Societies, reporting to the Society the names of such physicians as they think proper. They may ask for instructions from the Society in any doubtful case. The report shall be in order at any hour during the session.

SEC. 2. A Committee on Finance, to consist of three members, shall be appointed by the President at the morning session of the first day of each meeting. They shall examine the accounts of the Treasurer and report to the Society, making suggestions as to the amount of assessments for the coming year, the remuneration of the Secretary and the Treasurer, and such other suggestions concerning the finances of the Society as they may think proper.

SEC. 3. A Committee on Nominations, to consist of five members, shall be appointed by the President at the morning session of the second day of each meeting. They shall nominate an Orator, an Essayist, a Leader of Debate, a Committee on Publication, an Obituary Committee, Delegates to the American Medical Association, the Virginia Medical Association, the South Carolina Medical Association, and such other associations as the Society may determine, all to serve one year; also a Board of Censors, to consist of three members and to serve three years.

SEC. 4. The Board of Censors shall investigate the professional status of any member of the Society which shall be called in question and presented to them by charges and specifications. Upon the presentation of such charges and specifications they shall organize a medical court, before which the case shall be tried: *Provided*, however, that such Board of Censors shall be

empowered to reconcile differences between members before going into a trial of the case. Should a case come to trial they shall make a report of their investigation to the Society, with such recommendation as they deem necessary and proper.

ARTICLE VIII.

OF THE SECTIONS AND VOLUNTARY COMMUNICATIONS.

SECTION 1. The newly installed President shall, at the last session of each meeting, appoint a member to serve as Chairman of each of the following sections, to-wit: Anatomy and Surgery, Therapeutics and Practice of Medicine, Physiology and Materia Medica, Obstetrics, Gynecology, Medical Jurisprudence and State Medicine, Pathology and Microscopy, Pediatrics and Railway Surgery.

SEC. 2. At any time after the meeting the Chairman of each section may appoint three such members as he may select as his aisistants to work up such items as he may designate, confining himself to the general advancement in his section.

SEC. 3. The Chairman of sections shall send into the Secretary, not later than thirty days previous to each meeting of the Society, the titles of papers to be presented by themselves and their assistants to be used by the Secretary in making a programme for the meeting.

SEC. 4. No paper shall be read before the Society unless the author be present, unless his absence be due to some unavoidable circumstances. A paper presented by proxy may be referred to the Committee on Publication.

SEC. 5. No paper shall be referred to the Committee on Publication until it has been placed in the hands of the Secretary; and the Secretary shall not return any paper accepted by the Society, without the consent of the Society, and then he shall take a receipt for the same.

SEC. 6. No paper shall be received by or read before this Society that has been presented to any other Society, or that has been offered for publication in any journal; and in the case of any paper accepted by the author is supposed to have invested with the Society all rights to its ownership.

SEC. 7. No paper shall be published in the Transactions of this Society unless approved by the Committee on Publication;

and any paper rejected by said committee shall be returned to the author through the Secretary of the Society.

SEC. 8. It is to be understood that the Society is not to be considered as endorsing all the views and opinions advanced by the authors of papers published in the Transactions of the Society.

ARTICLE IX.

OF THE FUNDS.

SECTION 1. Funds for defraying the expenses of the Society shall be raised by annual assessments on the active members.

SEC. 2. Each active member shall, after being duly elected and signing the Constitution, pay a sum of five dollars as an admission fee, and be subject to the annual assessment of the Society, except for the year of his admission.

SEC. 3. Should an active member fail to pay the annual assessment two years in succession, he shall be notified by the Treasurer of his delinquency, and if, after this notice, he does not pay his arrearage within sixty days, the Treasurer shall send his name to the Secretary and the member shall not be entitled to receive the Transactions until all dues are paid.

SEC. 4. Should a member be in arrears for four years and fail to pay after due notice from the Treasurer, his name shall be dropped. *Provided,* he may be reinstated at any meeting after endorsement by the Committee on Credentials, and on the payment of five dollars; and so retain his place on the roll as formerly. But this payment shall not entitle the member to receive the volumes of the Transactions that he has forfeited.

ARTICLE X.

MEETINGS OF THE SOCIETY.

The Society shall hold its meetings annually. The time and place of meeting shall be determined for each succeeding year by a vote of the Society.

ARTICLE XI.

OF THE CODE OE ETHICS.

The Society adopts, as a part of its regulations, that part of

the Code of Ethics of the American Medical Association which is published by its order.

ARTICLE XII.

PROVISION FOR AMENDMENTS.

Any proposition for amending this Constitution shall be presented in writing and shall lie over to be acted upon at the succeeding meeting of the Society. If it receives a majority of the votes cast it shall be adopted.

BY-LAWS.

OF THE ORDER OE BUSINESS.

1. The President, or in his absence, one of the Vice-Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers a presiding officer shall be chosen by a majority of the members present.

2. The appointment of a Committee on Credentials and the Committee on Finance.

3. Report of Committee on Credentials.

4. Roll call.

5. Reading of the President's Message.

6. Any business requiring early attention may, by permission, be introduced.

7. Correspondence shall be read by the Secretary.

8. Written communications upon medical subjects may be read and discussed. This shall include reports from sections as arranged each year by programme.

9. Oral communications may be read and discussed.

10. Election of officers.

11. The selection of a place for the next annual meeting of the Society.

12. Unfinished business.

12. Adjournment.

CODE OF MEDICAL ETHICS.

Of the Duties of Physicians to their Patients, and of the Obligations of Patients to their Physicians.

ARTICLE I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

SECTION 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring because there is no tribunal other than his own conscience to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick, with due impression of the importance of their office, reflecting that the case, the health and the lives of those committed to their charge depend on their skill, attention and fidelity. They should study, also, in their deportment, so to unite tenderness with firmness and condescension with authority, as to inspire the minds of their patients with gratitude, respect and confidence.

SEC. 2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

SEC. 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

SEC. 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs, and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in their last moments. The life of a sick person can be shortened, not only by the acts, but also by the words or manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

SEC 5. A physician ought not to abandon a patient because the case is thought incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance upon such circumstances would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to any pecuniary consideration.

SEC. 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy and more enlarged views in practice.

SEC. 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense, if they be proffered with politeness, and evince genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ARTICLE II.

OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

SECTION 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease and health for the welfare of those who avail themselves of their services, certainly have a right to expect and require that their patients should entertain a just sense of the duties which they owe to their medical attendants.

SEC. 2. The first duty of a patient is to elect as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist, and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

SEC. 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure or any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this

precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

Sec. 4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

Sec. 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

Sec. 6. The obedience of a patient to the prescriptions of his physician should be prompt and explicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often

happens that they are productive of much mischief, and in all cases they are injurious by contravening the plan of treatment adopted by the physician.

SEC. 7. A patient should, if possible, avoid even the friendly visits of a physician who is not attending him—and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when applied singly, yet conjointly they are very likely to be productive of disastrous results.

SEC. 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

SEC. 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical advisers unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

SEC. 10. A patient should after his recovery, entertain a just and endearing sense of the value of the services rendered by his physician; for these are of such a character that no mere pecuniary acknowledgement can repay or cancel them.

Of the Duties of Physicians to Each Other and the Profession at Large.

ARTICLE I.

DUTIES FOR THE SUPPORT OF THE PROFESSIONAL CHARACTER.

SECTION 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to extend his best abilities to maintain its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious and sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

SEC. 2. It is not in accord with the interest of the public or the honor of the profession that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be specially concerned with, the graduation of persons whom they have good reason to believe intend to support and practice any exclusive and irregular system of medicine.

SEC. 3. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical, and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he cannot command their respect and confidence, and to both because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye and an unclouded head may be essential to the well-being, and even to the life, of a fellow being.

SEC. 4. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or hand-bills, inviting the attention of individuals affected with peculiar disease—publicly offering advice and medicine to the poor gratis, or promising radical cures, or to publish cases and operations in the daily prints, or suffer such publications to be made, to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

SEC. 5. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret nostrum, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone gives it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent medicines, or in any way to promote the use of them.

ARTICLE II.

PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1. All practitioners of medicine, their wives and their children, while under paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly dear to him, tend to obscure his judgment and produce timidity and irresolution in his practice. Under such circumstances medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if

a distant member of the faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ARTICLE III.

OF THE DUTIES OF PHYSICIANS AS RESPECT VARIOUS OFFICES.

SECTION 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy which should always be performed with utmost consideration for the interest and character of the family physician, and when exercised for a short period all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent long-continued exercises of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

ARTICLE IV.

OF THE DUTIES OF PHYSICIANS AS REGARD CONSULTATIONS.

SECTION 1. A regular medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known acknowledged responsibility, recognized by this Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation whose

practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

SEC. 2. In consultations no rivalship or jealousy should be indulged; candor, probity and all due respect should be exercised toward the physician having charge of the case.

SEC. 3. In consultations the attending physician should be the first to propose the necessary questions to the sick, after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of the faculty attending, and by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

SEC. 4. In consultations the physician in attendance should deliver his opinion first, and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variations, and the reasons for it, ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

SEC. 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together and this is greatly practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional

engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present he will, of course, see the patient and prescribe; but if it be the consulting one, he should retire except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in writing, and under seal, to be delivered to his associate.

SEC. 6. In consultations theoretical discussions should be avoided as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded not on hypothesis, but on experience and observation.

SEC. 7. All discussions in consultations should be held as secret and confidential. Neither by words or manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants—they must equally share the credit of success as the blame of failure.

SEC. 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the number be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concession, as far as they can be justified by a concientious regard for the dictates of judgment. But in the event of its occurrence a third physician should, if practicable, be called upon to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

SEC. 9. As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion of both time and attention, at least a double honorarium may be reasonably expected.

SEC. 10. A physician who is called upon to consult should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified, as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ARTICLE V.

DUTIES OF PHYSICIANS IN CASE OF INTERFERENCE.

SECTION 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

SEC. 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenious hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

SEC. 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they

are made no particular inquiries should be instituted relative to the nature of his disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances, no unjust and illiberal insinuation should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are usually protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

SEC. 6. It often happens in case of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

SEC. 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on his return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or de-

parture from home of the latter, or who may have called for his attendance during his absence or sickness, or in any other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

Sec. 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient, who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no further direction unless it be expressly desired; and, in the last case, to request an immediate consultation with the practitioner previously employed.

Sec. 9. A wealthy physician should not give advice gratis to the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusive beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

Sec. 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ARTICLE VI.

OF DIFFERENCES BETWEEN PHYSICIANS.

Section 1. Diversity of opinion and opposition of interest may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a court-medical.

Sec. 2. As a peculiar reserve must be maintained by physicians towards the public in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of the medical attendants are assailed in their intercourse with each other, and which cannot be under-

stood or appreciated by general society, neither the subject matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

ARTICLE VII.

OF PECUNIARY ACKNOWLEDGMENTS.

SECTION 1. Some general rules should be adopted by the faculty, in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

Of the Duties of the Profession to the Public, and of the Obligations of the Public to the Profession.

ARTICLE I.

DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene and medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions in relation to the medical police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and contagious diseases; and when the pestilence prevails it is their duty to face the danger and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

SEC. 2. Medical men should always be ready, when called on by the legally constituted authorities, to enlighten coroners'

inquests and courts of justice on subjects strictly medical—such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a post mortem examination, it is just, in consequence of the time, labor and skill required and the responsibility and risk they incur, that the public should award them a proper honorarium.

SEC. 3. . There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood and certain of the public duties referred to in the first section of this article, should always be referred to as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform military duty, or to testify to the state of health of persons wishing to insure their lives, to obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances such professional services should always be cheerfully and freely accorded.

SEC. 4. It is the duty of physicians who are frequent witnesses of the enormities committed by quackery and the injury to health, and even destruction of life, caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretentions of artful empirics and imposters. Physicians ought to use all the influence which they possess, as professors in colleges of pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ARTICLE II.

OBLIGATIONS OF THE PUBLIC TO THE PHYSICIAN.

SECTION 1. The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education—and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability of heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

LIST OF MEMBERS.

[IN THE ORDER IN WHICH THEY SIGNED THE CONSTITUTION.]

Members will confer a great favor if they will look for any errors or omissions, changes, removals, or deaths in this list and mail the Secretary a card of correction. With the coöperation of the members it is possible to keep the list up to date.

1871	Dr.	W. I. Royster	Raleigh.
71	"	George Gillett Thomas	Wilmington.
1872	"	Francis Duffy	Newbern.
1873	"	A. G. Carr	Durham.
73	"	J. F. Miller	Goldsboro.
73	"	J. M. Hadley	LaGrange.
73	"	P. L. Murphy	Morganton.
1874	"	Jos. Graham	Charlotte.
74	"	W. H. Lilly	Concord.
74	"	T. D. Haigh	Fayetteville.
1875	"	L. J. Picot	Littleton.
75	"	W. H. Whitehead	Rocky Mount.
75	"	R. H. Speight	Wrendale.
1876	"	Henry Tull	Kinston.
76	"	J. D. McMillan	Lumberton.
1877	"	Geo. W. Long	Graham.
77	"	Geo. W. Graham	Charlotte.
77	"	N. S. Seivers	Salem.
77	"	Richard H. Lewis	Raleigh.
77	"	L. H. Hill	Germanton.
1878	"	R. J. Noble	Selma.
78	"	W. H. H. Cobb	Goldsboro.
78	"	I. W. Faison	Charlotte.
1879	"	J. G. Ector	Friendship.
79	"	J. M. Covington	Rockingham.
79	"	W. P. Beall	Greensboro.
79	"	A. D. McDonald	Wilmington.
79	"	S. B. Jones	Charlotte.
79	"	D. M. Prince	Laurinburg.
79	"	J. A. Sexton	Raleigh.
79	"	John C. Walton	Reidsville.
79	"	R. A. Hargrave	Robersonville.
79	"	Julian M. Baker	Tarboro.
79	"	Thos. E. Anderson	Statesville.
79	"	H. T. Trantham	Salisbury.

1880	Dr.	J. M. Stansill	Rockingham.
80	"	Thomas Hill	Goldsboro.
80	"	J. C. Shepard	Wilmington.
80	"	W. C. Galloway	Wilmington.
80	"	T. S. Burbank	Wilmington.
80	"	R. W. Thomas	Thomasville.
80	"	C. M. Poole	Craven.
80	"	J. L. Nicholson	Richlands.
80	"	A. W. Knox	Raleigh.
80	"	John Whitehead	Salisbury.
80	"	S. J. Montague	Winston.
80	"	L. W. Hunter.	Sardis.
1881	"	B. F. Whiteside	Hickory.
81	"	J. A. Reagan	Weaverville.
81	"	G. W. Fletcher	Fletchers.
81	"	M. H. Fletcher	Asheville.
81	"	T. M. Jordan	Raleigh.
81	"	R. L. Payne	Norfolk, Va.
81	"	T. F. Meisenheimer	Morven.
81	"	T. F. Pharr	Concord.
81	"	H. B. Weaver	Asheville.
81	"	A. J. Battle	Wadesboro.
81	"	J. H. Williams	Asheville.
81	"	W. D. Hilliard	Asheville.
1882	"	J. R. Irwin	Charlotte.
82	"	E. R. Wilson	Greensboro.
82	"	K. P. Battle	Raleigh.
82	"	R. S. Young	Concord.
82	"	R. A. Smith	Goldsboro.
82	"	C. A. Misenheimer	Charlotte.
1883	"	W. W. Faison	Goldsboro.
83	"	W. O. McDowell	Scotland Neck.
83	"	J. A. Stevens	Clinton.
83	"	I. M. Taylor	Morganton.
83	"	J. M. Hodges	LaGrange.
83	"	W. L. Hudson	Dunn.
83	"	F. R. Harriss	Henderson.
83	"	G. C. Edwards	Hookerton.
83	"	E. M. Summerell	Mill Bridge.
83	"	N. M. McLean	Gibson Station.
83	"	B. L. Long	Hamilton.
83	"	N. P. Boddie	Durham.
83	"	H. T. Bass	Tarboro.
83	"	Robert J. Gill	Henderson.
1884	"	W. G. Freeman	Murfreesboro.
84	"	W. C. Whitfield	Quinerly.
84	"	J. A. Burroughs	Asheville.

1884	Dr.	J. W. Long	Salisbury.
84	"	M. P. Perry	Macon.
84	"	G. J. Robinson	Smithfield.
84	"	M. R. Adams	Statesville.
84	"	G. T. Sikes	Grissom.
84	"	W. B. Pritchard	105W.73d st NY
84	"	M. H. Futrell	Conway.
84	"	B. F. McMillan	Plainview.
84	"	J. E. Grimsley	Snow Hill.
84	"	T. W. Long	Catawba.
84	"	G. W. Purefoy	Asheville.
1885	"	L. M. Archey	Concord.
85	"	W. E. Powell	Gastonia.
85	"	S. D. Booth	Oxford.
85	"	J. A. Hodges	Richmond, Va.
85	"	Annie L. Alexander	Charlotte.
85	"	A. D. Cotten	Morrisville.
85	"	S. L. Montgomery	Concord.
85	"	T. W. Long	Catawba.
85	"	K. Leggett	Hobgood.
85	"	W. W. Pharr	Newell's.
85	"	J. M. Faison	Faison.
85	"	J. W. McGee	Raleigh.
85	"	H. W. Dorsett	Bethany.
85	"	D. G. Caldwell	Concord.
85	"	J. M. O'Kelly	Williams' Mills
85	"	M. F. Fox	Gilmer's Store.
85	"	J. B. Carr	Old Sparta.
85	"	W. T. Pate	Gibson Station.
85	"	D. T. Tayloe	Washington.
85	"	Zeno Brown	Greenville.
85	"	F. W. Ritter	Moyock.
85	"	Mayland Bolton	Rich Square.
1886	"	G. H. Dodd	Clayton.
86	"	B. S. Utley	Holly Springs.
86	"	R. A. Whitaker	Trenton.
86	"	M. W. Harper	Dunn.
86	"	H. H. Harriss	Wake Forest.
86	"	M. E. Robinson	Goldsboro.
86	"	H. H. Dodson	Milton.
86	"	Joel Hill	Lexington.
1887	"	O. D. King	Albemarle.
87	"	W. D. Pemberton	Monroe.
87	"	A. W. Goodwin	Raleigh.
87	"	W. H. Bagwell	Greenville.
87	"	H. W. Lewis	Jackson.
87	"	D. O'Donoghue	Charlotte.

1887	Dr.	Henry H. Dodson	Milton.
87	"	S. W. Battle, U. S. N.	Asheville.
87	"	J. F. Beall	Linwood.
87	"	Joe Hill	Lexington.
87	"	J. Howell Way	Waynesville.
87	"	R. H. Stancell	Marg'ttesville.
87	"	R. A. Patterson	Aurelian Spgs.
87	"	J. McDeArmond	Mint Hill.
87	"	R. J. Brevard	Charlotte.
87	"	E. C. Register	Charlotte.
87	"	J. D. Croom	Maxton.
87	"	D. C. Parris	Hillsboro.
87	"	R. H. Winborne	Barnitz.
1888	"	J. A. Faison	Ben'ttsv'le, S.C
88	"	A. McDougald	Hope Mills.
88	"	W. J. Lumsden	Elizabeth City
88	"	G. H. Moran	Morganton.
88	"	N. B. Herring	Wilson.
88	"	H. S. Lott	Winston.
88	"	Jas. W. McGee, Jr	Raleigh.
88	"	S. A. Henly	Asheboro.
88	"	W. A. Monroe	Sanford.
88	"	W. S. Anderson	Wilson.
88	"	J. G. Broadnax	Greensboro.
88	"	F. T. Meriwether, U. S. N.	Asheville.
88	"	J. R. McLelland	Mooresville.
88	"	G. W. Lewis	Fremont.
88	"	J. B. Robertson	Clayton.
88	"	Thos. Stamps	Milton.
88	"	J. E. Ashcraft	Monroe
88	"	C. H. Lewis	Farmers.
88	"	E. B. Goelet	Saluda.
88	"	B. T. Cox	Redalia.
88	"	A. Cheatham	Durham.
1889	"	J. T. J. Battle	Wadesboro.
89	"	Oscar McMullan	Elizabeth City.
89	"	Albert Anderson	Wilson.
1890	"	W. G. Stafford	Burlington.
90	"	J. S. Lafferty	China Grove.
90	"	T. L. Booth	Oxford.
90	"	J. H. Marsh	Fayetteville.
90	"	P. B. Loftin	Grifton.
90	"	R. L. Gibbon	Charlotte.
90	"	W. A. Graham	Charlotte.
90	"	J. L. Ray	Burnsville.
90	"	W. H. Harrell	Williamston.
90	"	J. L. Egerton	Hendersonville

1890	Dr.	J. W. White	Wilkesboro.
90	"	E. G. Moore	Elm City.
90	"	E. P. Snipes	Jonesboro.
90	"	E. C. Laird	Hot Springs.
90	"	J. P. Munroe	Davidson.
90	"	R. D. Jewett	Winston.
90	"	W. H. Cobb, Jr	Goldsboro.
90	"	John Sweany	Leaksville.
1891	"	C. P. Ambler	Asheville.
91	"	R. C. Ellis	Shelby.
91	"	J. B. H. Knight	Williamston.
91	"	J. G. Waldrop	Hendersonville
91	"	W. F. Chenault	Elmwood.
91	"	C. G. Nichols	Roxboro.
91	"	Richard H. Whitehead	Chapel Hill.
91	"	Jos. L. Laxton	Morganton.
91	"	Karl von Ruck	Asheville.
91	"	D. A. Stanton	High Point.
91	"	Jas. A. Turner	High Point.
91	"	J. F. Sanderford	Creedmore.
91	"	D. I. Watson	Southport.
91	"	W. E. Headen	Morehead City.
91	"	J. A. Watson	Asheville.
91	"	J. C. Black	Pioneer Mills.
91	"	R. W. Palmer	Gulf.
91	"	W. P. Ivey	Lenoir.
1892	"	E. L. Cox	Jacksonville.
92	"	W. J. Harrell	Aulander.
92	"	R. W. Mills	Troutman's.
92	"	Wade H. Atkinson	Wash'gt'n, D.C
92	"	Silas P. Wright	Wilmington.
92	"	K. A. Blue	Laurinburg.
92	"	H. Johnson	Grifton.
92	"	A. J. Patterson	Liberty.
92	"	F. P. Gates	Manteo.
92	"	W. R. Mayo	Jamesville.
92	"	C. B. Ingram	Mt. Gilead.
92	"	T. S. McMullan	Hertford.
92	"	J. B. Shamberger	Star.
92	"	E. G. Goodman	El Paso.
1893	"	T. B. Williams	Ridgeway.
93	"	G. M. Bell	Wakefield.
93	"	T. A. Matthews	Castalia.
93	"	F. H. Seawell	Emit.
93	"	R. J. Nelson	Robersonville.
93	"	Albert Houck	Lenoir.
93	"	U. S. Hassell	Plymouth.

1893	Dr.	J. M. Flippin	Salisbury.
93	"	C. A. Julian	Thomasville.
93	"	Jas. F. Rieves	Julian.
93	"	W. H. Wakefield	Charlotte.
93	"	J. F. Highsmith	Fayetteville.
93	"	E. F. Strickland	Bethania.
93	"	M. F. Morphew	Marion.
93	"	H. C. Williams	Sanford.
93	"	R. A. Moore	Durham.
93	"	R. L. Davis	Bryson City.
93	"	W. H. Nicholson	Louisburg.
93	"	Robt. J. Gill	Henderson.
93	"	J. G. Blount	Washington.
93	"	W. R. Hollingsworth	Mt. Airy.
93	"	J. H. Gibbon	Philadelp'a,Pa.
93	"	M. L. Stevens	Asheville.
93	"	C. N. Roberson	Ascend.
1894	"	J. R. Gordon	Jamestown.
94	"	C. O.H. Laughinghouse	Greenville.
94	"	J. R. Hester	Prospect Hill.
94	"	W. W. McKenzie	Salisbury.
94	"	W. L. Taylor	Mt. Airy.
94	"	J. H. Mease	Canton.
94	"	J. H. Jenkins	Crisp.
94	"	C. L. Jenkins	Raleigh.
94	"	C. L. Gilmer	Greensboro.
94	"	L. D. Wharton	Smithfield.
94	"	O. B. Stroud	Ore Hill.
94	"	J. D. Edwards	Siler City.
94	"	W. T. Steele	Mt. Olive.
94	"	C. E. Walker	Huntersville.
94	"	W. J. Vestal	Tyro Shops.
94	"	Jno. E. Logan	Greensboro.
94	"	W. J. Jones, Jr.	Wilson.
94	"	A. A. Kent	Lenoir.
94	"	D. A. Roberson	Guilford Col'ge
94	"	A. H. Harris	Wilmington.
94	"	W. O. Spencer	Yanceyville.
94	"	J. A. Myers	Lexington.
94	"	A. J. Crowell	Charlotte.
94	"	G. M. Ivie	Stoneville.
94	"	G. R. Hughes	Pollocksville.
94	"	D. J. Hill	Lexington.
94	"	G. A. Smith	Siler City.
1895	"	E. H. Sugg	Snow Hill.
95	"	F. H. Russell	Wilmington.
95	"	W. E. Murphy	Carr.

1895	Dr.	W. D. Bowen	Bath.
95	"	Geo. H. West	Newton.
95	"	W. L. Kirkpatrick	Crab Tree.
95	"	W. T. Turlington	Fremont.
95	"	J. S. Brown	Salisbury.
95	"	R. S. McGeachy	Raleigh.
95	"	C. E. Moore	Wilson.
95	"	H. A. Royster	Raleigh.
95	"	J. C. Montgomery	Charlotte.
95	"	Joseph Dixon	Ayden.
95	"	B. W. West	Eureka.
95	"	Jno. Thames	Greensboro.
95	"	J. C. Rodman	Washington.
95	"	Claude M. Jones	Grimesland.
95	"	B. L. Ashworth	Marion.
1896	"	Ab. Alexander	Columbia.
96	"	Geo. Doughton	N. Wilkesboro.
96	"	C. C. Jackson	Plymouth.
96	"	W. C. Brownson	W. Asheville.
96	"	J. M. Turner	Wilkesboro.
96	"	Fred. L. Potts	Vanceboro.
96	"	Chas. W. Mosley	Elkin.
96	"	W. T. Holt	Donnahu.
96	"	A. Y. Linville	Salem.
96	"	Goode Cheatham	Henderson.
96	"	James M. Parrott	Kinston.
96	"	Jos. W. Kornegay	Mt. Olive.
96	"	F. H. Holmes	Clinton.
96	"	E. Fulp	Fulp.
96	"	J. E. McLauchlin	Cool Spring.
96	"	John Bynum	Winston.
96	"	Chas. B. McAnally	Madison.
96	"	G. W. Pressly	Charlotte.
96	"	W. K. Reid	Pineville.
96	"	W. H. Crowell	Whiteville.
96	"	Carl V. Reynolds	Asheville.
96	"	W. G. Sutton	Winston.
96	"	D. N. Dalton	Winston.
96	"	T. E. Asbury	Asbury.
96	"	T. S. Faucette	Burlington.
96	"	E. E. Klutz	Troutman.
96	"	Anna M. Gove	Greensboro.
96	"	Thos. B. Ashby	Mt. Airy.
96	"	B. E. Reeves	Lamar.
96	"	J. R. Reitzel	High Point.
96	"	Chas. L. Summers	Winston.
96	"	J. B. Smith	Pilot Mountain

1896	Dr.	J. W. Rodwell	Cana.
1897	"	F. M. Clarke	Beaufort.
97	"	H. L. Baird	Asheville.
97	"	R. S. Primrose	Newbern.
97	"	Clara E. Jones	Goldsboro.
97	"	G. A. Coggeshall	Oxford.
97	"	Chas. J. Sawyer	Belcross.
97	"	E. A. Moye	Greenville.
97	"	B. K. Hays	Oxford.
97	"	J. W. Duguid	Dover.
97	"	J. H. Pool	South Mills.
97	"	Thos. F. Costner	Lincolnton.
97	"	L. P. Aaron	Mt. Olive.
97	"	N. G. Moore	Pineville.
1898	"	Clarence Porter Jones	Benson.
98	"	George A. Ramsaur	China Grove.
98.	"	L. E. Ricks	Parmele.
98	"	C. C. Champion	Mooresboro.
98	"	R. J. Teague	Roxboro.
98	"	T. E. McBrayer	Shelby.
98	"	G. S. Tenant	Asheville.
98	"	Eug. B. Glenn	Asheville.
98	"	Chas. L. Minor	Asheville.
98	"	W. E. Hemphill	Arden.
98	"	G. A. Brown	Bear Poplar.
98	"	Jas. R. Alexander	Lowesville.
98	"	Sam'l McK. Crowell	Madge.
98	"	J. W. P. Smithwick	LaGrange.
98	"	Joy Harris	Burlington.
98	"	D. P. Whitley	Millingpost.
98	"	H. N. Abernathy	Denver.
98	"	S. F. Pfohl	Salem.
98	"	J. A. Williams	Prospect Hill.
98	"	J. M. Blair	Monroe.
98	"	S. J. Love	Long's Store.
98	"	W. M. Fowlkes	Rockingham.
98	"	E. R. Russell	Hickory.
98	"	J. D. Williams	Lewisville.
98	"	W. R. McCain	McCain's.
98	"	W. H. Wooten	Davidson.
98	"	E. H. Spainhower	Jolliet.
98	"	L. A. Crowell	Crimsic.
98	"	Geo. D. Everington	Lauringburg.
98	"	James R. Parker	Menola.
98	"	C. M. Strong	Charlotte.
98	"	J. F. Stewart	Red Shoals.
98	"	R. E. Jenkins	Belmont.

1898.....Dr. F. L. Long ....Catawba.
98..... ..... " J. E. Kerr ....Pee Dee.
98..... " W. J. Jones.....Outlaw's B'dge
98..... ..... " Jno. T. Burrus.....Jonesville.
98..... " John E. S. Davidson.....Huntersville.
98..... .... " S. P. Woody.....Spring Creek.
98..... .. " S. T. Flippin..... ....Siloam.
98..... " R. L. Rierson..... .....Elks.
98..... " S. A. Stephens .. ..Monroe.
98..... " F. H. Gilreath.....Moravian Falls.
98..... " W. A. Rodgers.....Franklin.
98..... ..... " J. I. Campbell .....Mint Hill.
98..... " E. C. Boyte..... .....Mount Holly.
98..... " W. P. Knight.....Oak Ridge.
98..... " Chas. Highsmith.....Parkersburg.
98..... " O. P. Schaub..... Culler.
98..... " Jno. B. Ray.....Leaksville.
98..... " J. W. McPherson .....Liberty.
98..... " Herbert B. Thomas.....Newbern.
98..... " James R. Campbell.....Newton.
98..... " Chas. S. Mangum.....Chapel Hill.
98..... " W. Sinclair Davidson.....Triangle.
1899..... " Thos. P. Cheesborough....Asheville.
99..... " W. C. Daniel.....Adoniram.
99..... ..... " B. Ray Browning.....Littleton.
99 .... " J. E. Moore..... .Sandy Mush.
99..... " J. A. Morris.....Wilton.
99..... " E. R. Morris.....Asheville.
99..... " C. A. Anderson.....Burlington.
99..... " A. S. Pendleton.....Warrenton.
99..... " D. E. Sevier .....Asheville.
99..... " James Sawyer.....Asheville.
99..... " J. F. Abell.....Canton.
99..... " A. M. Bennett .....Bryson City.
99..... " J. T. Sevier.....Asheville.
99... ..... " Earl Grady.....Tryon.
99... ..... " H. C. Menzies.....Hickory.
99..... ..... " Chas. S. Jordan.....Asheville.
99... ..... " Frank G. Wilson.....Gastonia.
99..... .. " B. R. Graham.....Wallace.
99..... " G. P. Reid.....Old Fort.
99..... " Chas. L. Pearson.....Asheville.
99 .... " John H. Woodcock.....Asheville.
99 .... " J. B. Matthews.....Pittsboro.
99 .... " R. L. Allen.....Waynesville.
99 ..... " Geo. J. Gouger.... .....Tulin.
99 ..... " W. J. McAnally.....High Point.

1899	Dr.	J. F. Peavy	Asheville.
99	"	T. L. Brooks	Black Creek.
99	"	Wm. Fountain	Leggett.
99	"	Thomas Stringfield	Waynesville.
99	"	J. M. Newbern	Powell's Point.
99	"	L. B. McBrayer	Asheville.
99	"	John McCampbell	Morganton.
99	"	G. M. Van Poole	Salisbury.
99	"	Jos. P. Whitehead	Rocky Mount.
99	"	W. O. Nisbet	Waxhaw.
99	"	Jno. B Wright	Coharie.
99	"	Walter C. Lauderdale	Asheville.
99	"	H. McK. Tucker	Raleigh.
99	"	R. T. S. Steele	Rockingham.
99	"	H. M. S. Cason	Edenton.
99	"	Charles VanBergen	Asheville.
99	"	D. A. Garrison	Bessemer City.
99	"	S. H. Crocker	Moyeton.
99	"	J. Warren Achorn	Boston, Mass.
99	"	R. F. Yarborough	Louisburg.
99	"	Thos. W. Davis	Louisburg.
99	"	A. Miller Whisnant	Caroleen.
99	"	R. Hicks	Henrietta.
99	"	W. E. Miller	Burlington.
99	"	H. F. Long	Statesville.
99	"	J. R. Pope	Scotland Neck.
99	"	W. H. Ward	Plymouth.
99	"	W. P. Whittington	Asheville.
1900	"	W. N. Tate	Mebane.
00	"	H. Hartwell Bass	Henderson.
00	"	E. F. Corbell	Sunbury.
00	"	S. E. Koonce	Pollocksville.
00	"	L. L. Staton	Tarboro.
00	"	E. J. Buchanan	Lexington.
00	"	R. E. Lee	Clinton.
00	"	W. W. Dawson	Grifton.
00	"	R. P. Morehead	Lasker.
00	"	A. R. Winston	Franklinton.
00	"	Raymond Pollock	Kinston.
00	"	Isaac W. Lamm	Lucama.
00	"	E. Delia Dixon	Raleigh.
00	"	Sallie Borden	Goldsboro.
00	"	Edmund Harrison	Greensboro.
00	"	Wade H. Bynum	Germanton.
00	"	J. B. Person, Jr.	Selma.
00	"	E. T. Dickinson	Smithfield.
00	"	J. R. Palmer	Hookerton.

1900	Dr.	W. L. Dunn	Asheville.
00	"	L. Harrell	Statesville.
00	"	Paul Paquin.	Asheville.
00	"	J. E. Patrick	Institute.
00	"	J. C. Wessell	Wilmington.
00	"	E. J. Nixon	Wilmington.
00	"	A. C. Hoyt	Washington.
00	"	J. W. Taylor	Union.
00	"	J. W. Wood	Scotland Neck.
00	"	B. F. Halsey	Roper.
00	"	C. F. Griffin	Woodland.

HONORARY FELLOWS.

DATE OF SIGNING CONSTITION.			AT SESSION OF
1887	Dr.	J. M. Lawing, Lincolnton	1891
1855	"	J. G. Ramsay, Salisbury	83
55	"	Peter E. Hines, Raleigh	98
1859	"	Eugene Grissom, Pueblo, Colorado	98
1860	"	W. J. Jones, Goldsboro	98
60	"	Chas. J. O'Hagan, Greenville	98
60	"	J. W. Jones, Tarboro	98
60	"	J. K. Ruffin, Wilson	98
1861	"	P. A. Barrier, Mt. Pleasant	98
67	"	Geo. L. Kirby, Raleigh	98
67	"	J. F. Shaffner, Salem	98
1868	"	W. T. Cheatham, Henderson	98
68	"	F. J. Haywood, Raleigh	98
68	"	B. P. Alston, Henderson	98
69	"	H. T. Bahnson, Salem	1900
1870	"	W. W. Lane, Wilmington	00
70	"	Wm. J. Love, Wilmington	00
70	"	Jas. McKee, Raleigh	00
70	"	Willis Alston, Littleton	00
70	"	W. J. H. Bellamy, Wilmington	00
1887	"	J. F. Beall, Linwood	00

HONORARY MEMBERS.

Dr. Hunter McGuire	Richmond, Va.
Dr. L. McL. Tiffany	Baltimore, Md.
Prof. L. A. Sayre, M. D	New York.
Dr. W. T. Howard	Baltimore, Md.
Dr. W. W. Keen	Philadelphia.
Dr. W. L. Robinson	Danville, Va.

LIST OF MEMBERS.

[ALPHABETICALLY ARRANGED.]

Members marked thus * were present at the last meeting.

Aaron, L. P.	Mt. Olive	1897
Abel, J. F	Canton	1899
Abernathy, H. N	Denver	1898
Achorn, J. Warren	Boston, Mass	1899
Adams, M. R.	Statesville	1884
Alexander, Ab	Columbia	1896
Alexander, Annie L.	Charlotte	1885
Alexander, J. R.	Lowesville	1898
Allen, R. L.	Waynesville	1899
Alston. P. B	Henderson	1868
Alston, Willis	Littleton	1870
Ambler, C. P.	Asheville	1891
*Anderson, Albert	Wilson	1889
Anderson, C. A.	Burlington	1899
*Anderson, T. E.	Statesville	1879
Anderson, W. S.	Wilson	1888
Archey, L. M.	Concord	1885
Asbury, F. E.	Asbury	1896
Ashby, Thos. B.	Mt. Airy	1896
Ashcraft, J. E	Monroe	1888
Ashworth, B. L.	Marion	1895
Atkinson, W. H	707 12th St., N. W. Wash'gton, D. C.	1892
*Bagwell, W. H.	Greenville	1887
Bahnson, H. T.	Salem	1869
Baird, H. L.	Asheville	1897
*Baker, Julian M.	Tarboro	1879
Barrier, P. A.	Mt. Pleasant	1861
*Bass, H. T.	Tarboro	1883
*Bass, H. Hartwell	Henderson	1900
*Battle, A. J.	Wadesboro	1881
*Battle, J. T. J.	Greensboro	1889
*Battle, K. P., Jr.	Raleigh	1882
*Battle, S. W.	Asheville	1887
Beall, J. F.	Linwood	1887
Beall, W. P.	Greensboro	1879
Bellamy, W. J. H.	Wilmington	1870
*Bell, G. M.	Wakefield	1893

Bennett, A. M.	Bryson City	1899
Best, B. W.	Eureka	1895
*Black, J. C	Pioneer Mills	1891
Blair, J. M.	Monroe	1898
*Blount, J. G.	Washington	1893
Blue, K. A.	Laurinburg	1892
Boddie, N. P.	Durham	1883
Bolton, Mayland	Rich Square	1885
Boyte, E. C.	Mount Holly	1898
Booth, S. D.	Oxford	1885
Booth, T. L.	Oxford	1890
*Borden, Sallie	Goldsboro	1900
Bowen, W. D.	Bath	1896
Brevard, R. J.	Charlotte	1887
*Broadnax, J. G.	Greensboro	1888
*Brooks, T. L	Black Creek	1899
Brown, G. A.	Bear Poplar	1898
Brown, J. S.	Salisbury	1895
*Brown, Zeno	Greenville	1885
*Browning, B. Ray	Littleton	1899
Brownson, W. C.	West Asheville	1896
*Buchanan, E. J	Lexington	1900
Burbank, T. S.	Wilmington	1880
*Burroughs, J. A.	Asheville	1889
Burrus, J. T	Jonesville	1898
Bynum, Jno	Winston	1896
*Bynum, Wade H.	Germanton	1900
Caldwell, D. G.	Concord	1885
Campbell, J. I.	Mint Hill	1898
Campbell, James R.	Newton	1898
*Carr, A. G.	Durham	1873
*Carr, J. B.	Old Sparta	1885
*Cason, H. M. S.	Edenton	1899
Champion, C. C	Mooresboro	1898
Cheatham, A	Durham	1888
Cheatham, Goode	Henderson	1896
Cheatham, W. T.	Henderson	1868
Cheeseborough, Thos. P.	Asheville	1899
Chenault, W. F.	Elmwood	1891
Clarke, F. M.	Beaufort	1897
Cobb, W. H., Jr	Goldsboro	1890
*Cobb, W. H. H.	Goldsboro	1878
Coggeshall, G. A	Oxford	1897
*Corbell, E. F.	Sunbury	1900
Costner, Thos. F.	Lincolton	1897
Cotten, A. T.	Morrisville	1885
Covington, J. M.	Rockingham	1879

*Cox, B. T.....Redalia.....1888
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Crocker, S. H.....Moyeton.....1899
Croom, J. D.....Maxton.....1887
Crowell, A. J.....Charlotte.....1894
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Crowell, Sam'l McK.....Madge.....1898
Crowell, W. H.....Whiteville.....1896
Dalton, D. N.....Winston.....1896
Daniel, W. C.....Adoniram.....1899
Davidson, John E. S.....Huntersville.....1898
Davidson, W. Sinclair.....Triangle.....1898
Davis, R. L.....Bryson City.....1893
Davis, Thos. W.....Louisburg.....1899
*Dawson, W. W.....Grifton.....1900
DeArmond, J. Mc.....Mint Hill.....1887
*Dixon, Joseph.....Ayden.....1895
*Dickinson, E. T.....Smithfield.....1900
*Dixon, E. Delia.....Raleigh.....1900
*Dodson, H. H.....Milton.....1886
Dorsett, H. W.....Bethany.....1885
Doughton, Geo.....North Wilkesboro.....1896
Duffy, Francis.....Newbern.....1872
Duguid, J. W.....Dover.....1897
*Dunn, W. L.....Asheville.....1900
Ector, I. G.....Friendship.....1879
*Edwards, G. C.....Hookerton.....1883
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*Faison, J. A.....Bennettsville, S. C.....1888
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*Pendleton, A. S.	Warrenton	1899
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*Sanderford, J. F.	Creedmore	1891
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*Summerell, E. M.	Mill Bridge	1883
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*Tate, W. N.	Mebane	1900
*Tayloe, D. T.	Washington	1885
*Tayloe, J. W.	Union	1900
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*Tucker, H. McK.	Raleigh	1899
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*Weaver, H. B.	Asheville	1881
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*Whitehead, R. H.	Chapel Hill	1898
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